MARINE RECORD

ESTABLISHED 1878.

VOL. XXIV, No. 13. CLEVELAND -- MARCH 28, 1901 -- CHICAGO. $2.00 Per Year. 5c. Single Copy

UNITED STATES TRADE AND COMMERCE.

The most striking fact in our export development is the remarkable growth of the foreign demand for our iron and steel, our exports amounting to nearly $130,000,000 in 1900 against $32,000,000 in 1895. In an article in the New York Evening Post of January 12, 1901, Mr. Andrew Carnegie says the United States has not only supplied its own wants, "but is competing to supply the wants of the world, not only in steel, but in the thousand and one articles of which steel is the chief component part," and expresses the opinion that the increasing demand from the world at large "can be met only by the United States." The influence of our steel-making capacity, adds Mr. Carnegie, "must be marvelous, for the nation which makes the cheapest steel has the other nations at its feet as far as manufacturing is concerned in most of its branches. The cheapest steel means the cheapest ships, the cheapest machinery, the cheapest thousand and one articles of which steel is the base."

The American workingman, though receiving higher wages, produces, with labor-saving machinery, at a lower unit of cost, and his greater application and ingenuity enable him to avail himself effectively of the most recent inventions and appliances for improving the quality of his special line of work. The American factory system is highly organized and more efficient than any other, and if our export trade were as well developed, there would be little to fear. The only lesson our manufacturers need to learn, it would seem, is the necessity of manufacturing especially for foreign trade, and the great increase of requests for information from our consuls as to the kinds of goods wanted in particular markets, and also of manufacturing processes employed in this or that line of industry, encourages the hope that there is beginning to be a general perception of this important fact.

Germany, as well as Great Britain, seems fully sensible of the seriousness of American competition. In a recent issue, the Hamburger Fremdenblatt* points out that the United States, which ten years ago exported more than 80 per cent. of agricultural products and less than a fifth of manufactured goods, to-day draws nearly a third of its entire export from the products of its factories. "In other words, the Union is marching with gigantic strides toward conversion from an agricultural to an industrial nation." Does not the rapid increase of the United States in the value of industrial exports, the Fremdenblatt asks, "constitute an imminent danger for all competing nations?"

Dr. Vosberg-Rekow, head of the German bureau for the preparation of commercial treaties,* attributes the remarkable growth of exports of American manufacturers to Europe in part to the activity of our consular service. "The United States," he says, "has covered Europe with a network of consulates and makes its consuls at the same time inspectors of our exports and vigilant sentinels, who spy out every trade opening or advantage and promptly report it." Dr. Vosberg-Rekow also dwells upon the eminently practical character of American industrial and business methods. "Germany's industrial advancement," he says, "is principally due to the thoroughness of her technical education. It is strengthened by the continuous substituting of machinery and machine tools for hand labor. Still in this respect the English industry in some branches is ahead of us. It is worthy of note that in this evolution, too, the United States has the foremost place and has made gigantic strides not only in applying machine tools, but in inventing and manufacturing them, so that to-day she supplies us. This signalizes in an extraordinary degree American intelligence. Thus the Americans, though wanting our superior technical education, thanks to their practical eye, improve upon our methods and apparatus. Theirs is rather the activity of an experimentalist than that of a trained craftsman, but a clever faiseur, if he but have assurance and luck, may distance the educated master. The Americans have no thorough education, nor do they possess a modern industrial system, as we Europeans understand the term. The American applies himself to a single branch or to a specialty, with utter disregard of European methods and their results; he devotes to his work an amount of energy which stupefies Europeans, and for a while he succeeds in driving us out of the line of articles on which he has centered his energy. Against such peculiar activity a general trade policy is quite ineffectual; we must put ourselves in condition to counteract this artificially forced growth of specialized industry."

VIEWS OF A BLUE JACKET.

(From the New York Sun, March 11, 1900.)

To the Editor of The Sun—Sir: The average enlisted man who has served as seaman or petty officer in the Navy knows well that a man promoted from their class is not fitted by association, manner or general deportment to command. If the question was to be decided by vote of the rank and file, not one warrant officer out of one hundred would be elected to a commission. The writer hereof knows whereof he speaks. Send a reporter quietly to the guard or other ships where Matelots "most do congregate," get their opinions, and my statements will be substantiated.

Admiral Sampson from the point of view of the majority of enlisted men in the Navy was correct in his ideas of what an officer should be. God bless my soul! Do you suppose Jack wants a man over him who is not at least his equal?

Admiral C. R. P. Rogers, many years ago, when this, or a similar question was submitted to him for a report to the Department which would enable the Secretary to act intelligently, said, in substance, that the grade of warrant officers was kept "to enable the Department to reward meritorious petty officers as far as practicable, to furnish an incentive to good men forward, but it never was contemplated that such men should be commissioned." Now Admiral Rogers was no dude, no aristocrat, but he was an American naval officer in all that the title implies.

Who was a better sailorman, a finer man all through, than the late John W. Philip? I had the honor to sail with him in the Richmond. We had few warranted men, but the Department allowed she was an A1 vessel as far as efficiency, discipline, etc., was concerned. There would be several blue moons in the sky before Lieutenant-Commander or Rear Admiral Philip (may he rest in peace) would recommend the commissioning of gunners, boatswains, etc., and John W. was no aristocrat.

As before remarked, the Admiral was justified in his indorsement. Mark me, there are many worthy, painstaking warrant officers, and there are also many more fairly intelligent men "before the mast," and those men are all right "in the sphere of life in which God has placed them" and not elsewhere. Oh, yes, the writer as an American, with the desire to elevate America in all possible ways, objects to being represented by a man no better than himself.

Many very fine officers are now, and have been, appointed from civil life—none better. Annapolis doesn't count every time, but it counts pretty often, and many times turns out a bad article; more often it doesn't. Every man has a right to express his opinions in a respectful, decent manner. The writer avails himself of the right.

PATSY BOLIVER (one of them.)

THE ERIE CANAL.

The message from Governor B. B. Odell, Jr., to the state legislature, transmitting a report of the State Engineer and Surveyor on the survey for the proposed large canal under the laws of 1895, commonly known as the $9,000,000 act, is in part as follows:

After detailing the five different methods of improving the canal, Governor Odell takes up the financial view and says:

First, let us understand the cost, and what it means to the taxpayers of the State if any of the proposed plans are chosen. It may be assumed that money can be borrowed at 3 per cent. interest. As the bonds are limited by the Constitution to eighteen years, providing for the reduction of such bond issue at the rate of one-eighteenth each year, it would mean that the total cost by the first plan would be, including interest, $97,197,206.42, or a cost per year of $5,399,789.

The cost by the second plan, including interest, would be $69,479,514, a total cost per year of $3,859,973.

The total cost by the third plan, including interest, would be $72,296,964, or $4,016,498 per year.

By the fourth plan the total cost would be, including interest, $110,893,313, or $6,160,739 per annum.

By the fifth plan the cost would be, including interest, $25,143,241, or $1,396,846 per year.

The total cost per $1,000 estimated valuation, based on the present year's valuation of $5,671,363,345, would be $17.14 for the first plan, $12.25 for the second plan, $12.74 for the third plan, $19.55 for the fourth plan, and $4.43 by the fifth plan. In other words, this would be the total mortgage against each $1,000 of valuation of property in the State of New York. It is claimed, and the figures no doubt bear out the statement, that the canal, counting merely the cost resultant from expenditures for construction and improvements, disregarding the interest charges, has more than paid for itself. If, however, we add to this cost the interest upon the investment it is doubtful whether such a conclusion can be drawn.

It is your province to thoroughly consider the various plans proposed. It seems to me, however, that there can be no reasonable argument advanced for the large canal as a competitor with the Canadian canals, because under the most favorable conditions we would still be as far from Liverpool, and the distance from the port of New York would still be several hundred miles further than from Montreal. We can discard that part of the proposition, therefore, and consider the canal question as one more local than international. The question, however, is one that should be submitted to the people, and where so large a proportion of the citizens of the State desire affirmative action there would seem to be no excuse why the Legislature should delay submitting the matter for their approval or disapproval.

The figures which have been submitted show, first, that the cost as between the more expensive and the least expensive projects, for transportation, is a trifle, and the time consumed in transportation shows a difference of less than two days between the two. That the question of competition with the Canadian canals would still be unsolved, as even the large project would give a canal smaller than the Canadian canal. That our terminal charges would still be as large as at present, and that other legislation will be necessary in order to remove from the port of New York the disadvantages under which it labors, in order to restore to it some of its lost commerce.

I therefore recommend that the question of improving the canals along the line of the act of 1895 be submitted to the people at the coming election, in the belief that it will meet with greater approval, that the expenditure can be more easily met, and that it will serve all the purposes for which the canal was originally designed.

AROUND THE LAKES

DETROIT.

Special Correspondence to The Marine Record.

The river service of the postoffice will commence business April 15.

Capt. T. J. Brady, last season in the D. C. Whitney, will take charge of the Iron King.

Mr. David Carter, general manager of the D. & C. line, says that their first boat will start out next Monday, April 1.

The Anchor line has concluded a $160,000 deal in water front property adjoining the property of the D. & C. line. The frontage is 500 feet.

The Detroit Boat Works is having all it can do in turning out motor launches, and a fleet of about fifty will be put afloat when the river is clear of ice.

Capt. H. C. McCallum has been presented with a past captain's jewel as a token of appreciation from the Detroit harbor of the Masters' and Pilots' Association.

It is now being made optional with the owners or officers of a steamer whether they choose to carry an automobile or not, providing there is any explosive in the tanks.

On account of the attitude of the lake engineers, Capt. A. E. Stewart, manager of the steamer Bielman, will uphold any action taken by the Lake Carriers' Association.

Capt. John Roberts has been re-appointed to command the Star-Cole line steamer Arundel, with C. H. McCarten as engineer. Capt. Joseph Lockeridge will be captain and Joseph Maxwell engineer of the steamer Idlewild.

C. W. Kotcher, lumber dealer of this port, has bought the steamer Saginaw from Alvin Peters, of Toledo. The terms are private, but the price is said to be about $16,000. She will be used in the Lake Superior lumber trade by her new owner.

L. S. Sullivan, of the Toledo tug line, and the firm of Mitchell & Rowlands, lumber dealers, Toledo, have accepted the lake engineers scale of wages and other demands. The engineers are jubilant over every concession they can make owners give up.

Capt. Joseph Deerwood, of Sutton's Bay, died last Friday, aged 75. He was an old lake and sea captain, having located at Sutton's Bay in the early 50's. He was known in all lake ports and was the second white settler on the west shore of Grand Traverse Bay.

The Lake Erie rates for handling lumber at ports west of Buffalo are not yet settled, but as there is only a slight difference existing between the lumber shovers and the Lumber Carriers' Association, the wages will be easily fixed up before the earliest opening of navigation.

The original $9,000,000 improvements is all that Gov. Odell, of New York, cares about expending on the Erie canal and such is his message to the Legislature. The project for a 1,000 ton barge canal was altogether too stupendous and could not be countenanced as an outlay on State waterways.

Maj. Rothwell has heard from the Canadian authorities on the subject of the Detroit, Belle Isle and Windsor Ferry Co.'s license, which was claimed to give them exclusive ferry privileges in Windsor. According to Rothwell the license merely allows the old company to use docks for that purpose, and says nothing about any exclusive rights. He proposes to secure a similar license, and is organizing a company to run ferries between Griswold street, Detroit, and the foot of Ferry street Windsor.

In conformity with instructions from the Treasury Department Capt. Davis, of the revenue cutter Morrill, will arrange with Capt. Moore, of the revenue cutter Fessenden, in reference to the establishment of a patrol similar to that on St. Mary's river for the Detroit and St. Clair rivers. Owners and masters appear to be putting their boats in leading strings when they strike narrow waters and there is a probability of there soon being too much of this departmental supervision of iron ore drogers and general traffic.

Manager Evans of the Chicago office of the Anchor Line Company, arrived in Detroit a few days ago and concluded arrangements with Homer Warren & Co. for the purchase of the Beecher Grummond estate water front property lying between the foot of First street and the D. & C. docks north. The frontage is one of the most valuable on the river, owing to its location. The purchase was made subject to the leases now held, Messrs. Ashley & Dustin having an unexpired lease to the docks at the foot of First street, which still have two years to run.

The D & C. appointments for the coming season are as follows: Steamer City of Detroit, captain, Alexander J. McKay; engineer, William S. Huff. City of Cleveland, captain, Archibald McLachlin; engineer, John T. Hall. City of Alpena, captain, Matthew Lightbody; engineer, Almon Phillips. City of Mackinac, captain, H. J. Slyfield; engineer, William McDonald. City of the Straits, captain, Duncan McLachlan; engineer, D. Donaldson. State of Ohio, captain, Alex. H. McLachlan; engineer, D. Donaldson; State of New York, captain, Salem Robinson; engineer, William Stein.

Capt. A. B. Wolvin, of Duluth, president of the Lake Carriers' Association, is now acting for other parties in developing the St. Lawrence route with terminal facilities at Montreal. It is thought in some circles that Capt. Wolvin is working in the interests of J. J. Hill, of the Great Northern Railway, while others think that the steel syndicate and chiefly members of the American Steel & Wire Co., are backing him up. To swell the trade and bring together all possible interests would be like a John Gates deal and he is thoroughly conversant with all the details of such traffic and its probable future.

Capt. J. P. Cottrell has been appointed local inspector of hulls to succeed Capt. Sydney J. Miller, resigned. Capt. Joseph P. Cottrell is now between forty-five and fifty years of age and has sailed the lakes ever since he was about fifteen years of age. He was born at Marine City, Mich., and made that town his home until about four years ago, when he sought relief from a severe attack of asthma by locating at Redlands, San Joaquin county, Cal., where he now has a ranch. He is a son of Capt. G. H. Cottrell, formerly a well-known vessel man at Marine City, and is a brother of E. W. Cottrell of this city, and a cousin of Capt. J. W. Westcott, the marine reporter, and Capt. Charles H. Westcott, supervising inspector of hulls for this district.

DULUTH—SUPERIOR.

Special Correspondence to the Marine Record.

The new dock of the Northwestern Fuel Co., at Superior, is to have forty-five steel rigs. The dock of the Northwestern Coal Railway Co., at Allouez, has forty-four of these steel rigs.

A telephone is wanted at the Duluth life-saving station. Heretofore, the tug men have been very good in notifying that station of any mishap, but the communication ought to be direct.

There is now some talk of the tug men going on a sympathetic strike with the engineers. The move is said to be an unreasonable one, but they'll go out if the notion prevails whether it is or not.

J. J. Hill will build docks or wharvers and cargo sheds at Superior, exclusively for east-bound traffic. The Duluth facilities will also be used. It will take all summer to make the necessary changes, so that not much of the new traffic will come to Superior until the season of 1902, when ample accommodation will be ready.

It is expected that the two steamers on the stocks at Superior, building to the order of D. R. Hanna, Cleveland, will be ready for launching by April 1. Their dimensions are as follows: Keel length 318 feet, length over all 336 feet, beam 42 feet, molded depth 26 feet 6 inches. They will be provided with triple-expansion engines having cylinders of 20, 33 and 54 inches diameter and 40 inches stroke. The boilers, two for each steamer, will be 13 feet in diameter and 11 feet 6 inches long.

The Edward Hines Lumber Co. has chartered several lumber cargoes for Lake Erie at $2,50 per 1,000 feet. This is an advance of 25 cents over most charters made by the company, who now refuse to place any of their vessels at less than $2 50, although cargoes are being freely offered at $2.25. The first and second fleets that load at the head of Lake Superior generally secure from 25 to 50 cents more than is paid for cargoes shipped in July and August. The railroad companies have agreed to advance the freight on grain and this will have a tendency to help the Montreal route.

OCEAN freight rates, Boston to Liverpool, grain has been offered at 1¼ cents per bushel—said to be the lowest figure on record.

CHICAGO.

Special Correspondence to The Marine Record.

The Hines Lumber Co., of this port, has refused to submi to the demands of the engineers, and in consequence no work is being done on the steamers of its fleet.

It would appear that the more people that take short lake rides the more there are that want to go. Last season was a good one for the excursion and short trip boats, but this season it is expected will keep them busier than ever.

The steamer William L. Brown was launched on Wednesday from the yards of the Chicago shipyards. The new vessel is 450 feet in length and cost $300,000. She was named in honor of the president of the American Ship Building Co.

The new Milwaukee fire boat will probably be the finest of its class in the world. It will be planned somewhat after the Chicago fire boat Illinois, and already bonds to the extent of $100,000 have been authorized so as to provide funds for construction.

Rockefeller having sold out and the Hanna stock likely to be purchased, the American Ship Building Co. may soon be in the hands of the mammoth steel syndicate. As regards tonnage, it has already scooped in all of the largest fleets including Carnegie's.

Engineer William Bridges began the work of overhauling and fitting out the machinery of the "Soo" line steamer Hennepin, at Milwaukee. The "Soo" line has submitted to the demands of the engineers, and its tonnage is not registered in the Lake Carriers' Association.

Lake rates at Chicago are easier, charters being made at 2⅜ cents on wheat, 2¼ cents on corn and 1¾ cents on oats. The amount of grain on shipboard there now amounts to 4,450,000 bushels of which 116,000 is wheat, 2,964,000 bushels corn, 1,344,000 bushels oats and 26,000 bushels rye.

The marine engineers claim to be as determined after over a month's idleness as they were at the beginning. They claim that instead of becomming discouraged it is the vessel-owners who are beginning to feel anxious. This, they claim, is proved by the fact that the big owners are asking for conferences with the engineers.

The sanitary trustees have decided to reduce the current of the Chicago river to about 200,000 cubic feet per minute by the opening of navigation next week, so as to comply with the federal permit without waiting for the threatened intervention on the part of the government authorities. The engineering committee met government representatives with the view of devising a plan by which the sanitary district may comply with the federal law and at the same time not violate the state law creating the sanitary district which requires a flow of 300,000 cubic feet of water per minute.

The strike of the lake engineers has spread to the Barry line, and as a result the four boats of the company which have been in service this winter will be tied up for want of engineers. The principal trouble between the Barry line and the Engineers' Association comes over the wages class of the boats. According to the engineers' schedule of wages two of the boats belong to the first-class and two to the second-class. The Barry people claim they should be classified as third class, which would call for much smaller engineers' wages.

The C. Reiss Coal Co., Sheboygan, Wis., have contracted for all the materal to be used on their new dock at that point. The J. A. Mead Manufacturing Co., New York, will furnish the hoisting machinery and cable railway, and the Borden & Selleck Co., Chicago, the conveyors and roller screens. The company says: "It is our intention to have one of the most rapid docks on the chain of lakes. It will be equipped to operate with electricity, excepting the Mead hoists. It will have nearly double the storage and handling capacity than the docks recently destroyed by fire, and we expect to begin the work as soon as the weather will permit, and we hope to have the dock completed by June 1."

THE Cleveland MARINE RECORD says that some enterprising newspaper might put up a prize for the most lucid explanation of the reason why a drowned man floats face up and a woman face down. If our contemporary would consult a physician he might be able to obtain a correct answer to this strange circumstance.—The New York American Shipbuilder. Well! Let's see, a physician is a doctor, and in nautical parlance a doctor is the cook, also a seafaring man and one who ought to know all about it. We should judge, from the pertinent reference, that the American Shipbuilder likes to see full and plenty, with no waste, and never a southerly wind in the bread barge, all of which is the doctor's lookout. But what has that to do with the previous question?

CLEVELAND.

Special Correspondence to The Marine Record.

Fueling is to cost this season 8 cents per ton either from the car dump or scow.

Mr. J. C. Gilchrist is expected to arrive home from Hot Springs early next week.

The harbor lights are in service again and the river custom-house opens on Monday.

It is rumored that M. A. Hanna & Co. will manage the mines and tonnage of the American Steel Corporation.

The rate for shoveling ore from vessels at all Lake Erie ports was fixed at 13 cents a ton on Saturday afternoon.

Mr. G. W. Peck, representing Messrs. Page Bros. & Co., Boston, made one of his pleasant calls here this week in the interests of his firm.

The Kelly Island Lime Co. has made an individual agreement with several engineers and their boats will be on the route between Kelly's Island and this port.

After fighting the measure through all of the courts, the Lake Shore Railroad must now build a bridge at Ashtabula that will not be a hindrance to waterborne traffic.

The C. & B. line now figure on starting their first boat on April 15. The ice generally hangs around the eastern part of the lake longer than elsewhere, hence, the apparently late start.

Spring weather is here right enough, but there is little or no fitting out work going on. Owners seem indifferent until freights are offered and the engineers appear to be the same way until their demands are complied with.

I have heard some little kicking this week about the engineers' wages class for boats. Without giving any names, I may say that the complaint in both instances came from masters of small steamers owning an interest themselves.

The names of the members of the crew of the life-saving station are as follows: Capt. C. E. Motley in charge of the station; surfmen, David Sutherland, Daniel Mulcahy, Charles Rees, John McGillvery, Mila Eggleston, Peter Verberg, William Bent, Dewett Chapman. Service will begin on the opening of navigation.

The tugmen will continue their work as usual as far as they are concerned. They say that they have no grievance and that the engineers have not asked for help. Some of the tugmen are members of both organizations. Buffalo and Duluth have been so notified. The action means nothing, however, for if the engineers hold off from working, harbor tugs, as well as all the grades of longshoremen, will be idle.

The rate for discharging iron ore at Lake Erie ports is now fixed for the season at 20 cents, a reduction of 2 cents per ton from last year; 1 cent is deducted from the shovelers and one cent from the dock managers, who pay the engineers, hoisters, laborers, etc., besides furnishing the docks. The ore shovelers put their demand up to 15½ cents, finally settling at 13 cents, or one cent less than was paid last season.

Mr. Edwin S. Mills, manager of the American Steamship Co., (Carnegie fleet) entered into an agreement last fall with the engineers for work this season. He called them together expecting that they would live up to their contracts, the men refused to leave the union, and the conference ended without an understanding being arrived at, although the engineers tell of other inducements being offered. It is also said that the engineers requested the Carnegie fleet to withdraw from the Lake Carriers' Association, which was refused.

The managers of the large fleets appear somewhat indifferent about coming to the lake engineers' terms, although in some cases, inducements have been held out for the men to go to work. One manager reports enough applications on his list to man the fleet twice over. I also hear that in individual cases they would go to work, but are afraid of the treatment they would receive from their fellow workers both now and in the future, while others who are actually under signed agreements hold to the mandates of the association, or are willing to do as their presiding officer Mr. Uhler says. On the whole, some of the leading men will be closely watched in making future agreements, to say the least.

Negotiations are in progress between M. A. Hanna and J. P. Morgan, which are considered to have reference to a possible transfer of the former's holdings in the American Ship Building Co. to the latter, as trustee for the United States Steel Corporation, Mr. Hanna disposed of his two fleets, the Mutual and Menominee, two years ago to the National Steel Co., which is now a part of the trust, and his iron mines went to the same concern at the time. The American Ship Building Co. was formed during the summer of 1899, and has a capitalization, common and preferred, in the aggregate, of $62,000,000. It controls all of the shipyards on the chain of lakes with but a few exceptions, the largest independent companies being the Jenks yard at Port Huron, and the Craig yard at Toledo.

BUFFALO.

Special Correspondence to the Marine Record.

It was three weeks from now before a bunch of vessels cleared from this port last season. The signs are for an earlier break up of the ice this year.

There is a mighty quietness in marine circles here just now. Coal or ore is not mentioned and lumber is offered at too low a rate to accept, Menominee, $1.50 per M feet.

Capt. Charles Walton, residing at Alexandria Bay, N. Y., died last week aged 85 years. He was buried on Saturday. All of the lakefaring men living in the locality attended the funeral.

The story is going the rounds again about a new shipyard and dry dock to be established here with New York and local capital. The prospect for the deal being accomplished is said to look bright, but facts and names are wanting.

It now looks as if the Clergue marine insurance scheme, known as the "St. Lawrence Lloyds bill," will not get the subsidy it expected from the government at Ottawa. The objections are that many British and American companies have millions invested in the business of marine insurance in that section, and that the subsidy is asked, not to conduct business in Canada, but in the United States and Great Britain.

A big cut in towing charges and a fierce struggle for business this summer is predicted by marine men. The fight will be between the Great Lakes Towing Co., known as the tug trust, and the Maytham Line. The libel of four tugs belonging to the Maytham Line for repair bills was generally discussed. Representatives of the trust get angry when it is intimated they had anything to do with the libel, and the Maythams smile significantly. The repair bills were paid.

I can't vouch for the accuracy of this report of rebuild and repairs, but this is the way that it comes to me from Ogdensburg: "The tug Curlew, of the Hall fleet, has received the most attention, and when she leaves the ways in the spring, she will be practically a new boat in everything but name. The work on her has been progressing since Jan 1st, and is pretty well advanced, although it will be some time yet before all the repairs are completed. The tug was cut in two longitudinally, the upper part jacked up and her sides raised seventeen inches. The outside planking has been almost entirely renewed, and the old main and bilge keelsons, ceiling, frames and deck beams replaced. A portion of the deck and superstructure will also be rebuilt. The engine is being fitted with a new shaft and the defective parts of the machinery and boiler will be renewed. The work is in charge of Daniel Doyle, chief engineer of the Hall fleet." I believe that the original account of repairs to the Hall fleet appeared in an issue of the Ogdensburg Journal.

The Secretary of War, upon the recommendation of Gen. Wilson, Chief of Engineers of the Army, has ordered that the river and harbor work at Oswego be placed under the jurisdiction of the Buffalo district. Major Symons, the engineer officer in Buffalo, will, therefore, have charge of the work at Oswego in addition to his present duties. The change is made desirable from the fact that, owing to the failure of the river and harbor bill in the Senate, there is only a small balance of funds left for continuing the work at Oswego, and it is unnecessary, therefore, to maintain an engineer officer there for that work alone. Despite the failure of the bill, there is still abundant work for Major Symons in Buffalo and vicinity, and as the amount remaining to be expended at Oswego is only about $15,000, his labors will not be greatly increased by the additional jurisdiction. Oswego is the only point on the lakes where it has been necessary to abandon the army engineer's office on account of lack of funds resulting from the defeated river and harbor bill.

AND now, Admiral Schley, U. S. N., is to be presented with a $10,000 home situated in the suburbs of Washington. It would be more in order to establish a home or a fund for the incapacitated naval seamen, also the widows and orphans of those left destitute by the Spanish imbroglio. The destruction of the U. S. S. Maine left quite a wide gap for the dissemination of the wealth of the charitably disposed. Those who have reached the distinction of becoming admirals in the United States Navy are not in need of a home, thousands of others, service and ex service men are.

PORT HURON.

Special Correspondence to The Marine Record.

George Lynn left Friday for Buffalo to fit out the steamer Street for the coming season.

Capt. D. H. Westcott, of Marine City, says he first set foot in Port Huron in 1843. At that time there were but very few good houses in Port Huron.

The north wind of Monday night cleared St. Clair river of ice to a point as far down as the Grand Trunk elevator. The ferry boats are making uninterrupted trips to Sarnia today.

Some of the marine engineers have received word from the owners of the different boats to prepare for duty, but are unable to do so on account of the differences which exist between them.

A harbor of the American Shipmasters and Pilots' Association was organized at St. Clair on Thursday, with 45 members Capt. Richard O'Connor was elected captain of the harbor, and Asa Tappen, clerk.

The Jenks Ship Building Co., has ordered a number of electric motors to be used for driving its machinery at the yards on Black river. Two of the motors have already been received and electricians are engaged making the necessary connection.

The Botsford-Jenks Co. will build a one-million bushel elevator at St. Louis, Mo., to be run in connection with the southern railway. F. D. Jenks and Thomas Danger left on Monday night for St. Louis where they will have charge of the work. This same company will build an elevator in Scotland later in the year.

Major Fisk, government engineer at Detroit, has informed the city authorities that if the canal is constructed it will be necessary to provide for a gate at the lake. City engineer Phelps is at work on specifications and plans. It is not thought that the gate will be an expensive one. The requirement, however, will cause some delay in awarding the contract.

Chas. O. Duncan has returned from Buffalo, where he secured the steel steamer William Castle Rhodes to run on the new line between Port Huron and Duluth during the coming summer. He also has an option on several other boats. The Rhodes is a boat of 3,000 tons capacity. Mr. Duncan says that besides package freight the new line will carry grain from Duluth and Itasca to the Grand Trunk elevator.

A prominent vessel owner says: "There will be but very little rebuilding of boats in Port Huron this spring and only slight repairs will be made. Last spring when the owners of boats thought they were going to have an extraordinery season they spent thousands of dollars getting ready for the opening of navigation. The season was a disappointment and the repairs made last year must last until such time as business improves."

C. O. Duncan, J. E. Bostford and Frank D. Jenks have entered into a contract with the Grand Trunk railway to run a line of packet freight boats between Duluth and this city during the coming season. All of the contracts have been signed and Mr. Duncan is at present in Buffalo where he expects to secure the necessary boats. Up to about a year ago a line of steamers was maintained between Port Huron and Duluth and the unloading of boats at the Grand Trunk sheds was a source of much employment to the longshoremen of the city. C. O. Duncan will act as manager of the line.

Charter Party—Construction—Lay Days.—A charter party provided that from six o'clock of the morning next after the vessel "is reported and all ready to discharge," of which notice is to be given by the captain in writing to the consignee, the lay days shall begin to run. The consignee received verbal notice of the arrival of the vessel in the harbor at nine a. m. of September 8, and gave notice to her agents, designating a certain pier for her berth within an hour or two afterwards, before a written notice of readiness to discharge was received. About eleven a. m. of the same day such written notice was given, which, however, was false, as the vessel was still in the harbor. She did not proceed to her pier until nine a. m. of September 9. Held, that the lay days did not begin to run until six a. m. of the next working day; and where the vessel was discharged on the 21st, after deducting ten hours of a work day on which it rained, and one Sunday, and one day's disability of the vessel, the discharge was completed within the lay-day period of seven days and seventeen hours given by the charter. The St. Bernard, 105 Fed. Rep. (U. S.) 994.

Seamen—Wages—Penalty—Jurisdiction.—Under Rev. St. U. S. § 4547, relating to proceedings by seamen to recover their wages, and providing that nothing therein contained "shall prevent any seaman from maintaining an action at common law for the recovery of his wages," the state courts have jurisdiction of such common-law action. Calvin vs. Huntley, 59 N. E. Rep. (Mass). 435.

CANAL TRAFFIC OF THE DOMINION OF CANADA.

ANNUAL REPORT OF THE DEPARTMENT.

Following is a summary of the report of the Deputy Minister and Chief Engineer of the Dominion of Canada for the year ended June 30, 1900, the report of the Chief Engineer also dealing with works of construction up to December 1, 1900.

The total expenditure charged to capital account on the original construction and the enlargement of the several canals of the Dominion up to June 30, 1900, was $79,043,784.09. A further sum of $16,273,125.98 was expended on the repairs, maintenance and operation of these works, making a total of $95,316,910.07. These figures are the aggregate expenditure on specific canals and do not comprise certain items charged to "Canals in general." The total revenue derived, including tolls and rentals of lands and water-powers, amounted to $12,401,917.32.

The total expenditure for the fiscal year ended June 30, 1900, including canals in general, was as follows: on construction and enlargement $2,639,564.93, and $711,600.06 for repairs, renewals and operation, a total for the year of $3,351,164.99. The total net revenue collected for the fiscal year was $322,642.86, a decrease compared with the previous year of $46,401.52. The net canal tolls were $272,533.82, a decrease of $49,751.30. The total expenditure on canal staff and maintenance, repairs and renewals for the year was $711,600.06, an increase of $78,284.45, and the total net receipts amounting as above, to $322,642.86, the amount of expenditure in excess of receipts was $388,957.20, compared with an excess expenditure the previous year of $264,271.23.

The total traffic through the several canals of the Dominion for the season of 1899 amounted to 6,225,924 tons, a decrease of 392,551 tons compared with the previous year. This includes 3,006,664 tons passing through the Sault Ste. Marie Canal, which is free of toll. On the Welland Canal 789,770 tons of freight were moved, a decrease of 350,307; of which 462,523 were agricultural products, a decrease of 269,947, and 103,589 produce of the forest; 637,268 passed eastward and 152,502 westward; 769,618 were through freight, of which 622,104 passed eastward. Of this through freight Canadian vessels carried 309,546 tons, a decrease of 740, and U. S. vessels 460,072 tons, a decrease of 350,372. The total freight passed eastward and westward through this canal from U. S. ports to U. S. ports was 360,529 tons, a decrease of 127,010 tons compared with the year 1898. The quantity of grain passed down the Welland and the St. Lawrence canals to Montreal was 332,746 tons, a decrease of 186,786 compared with the previous year; of this 48,828 were transhipped at Ogdensburg, as against 40,257 transhipped in 1898. The further quantity of 39,545 tons of grain passed down the St. Lawrence canals, only, to Montreal, making the total 372,291 tons. The rate of toll on grain for passage through the Welland (giving free passage through the St. Lawrence canals) was 10c. a ton.

On the St. Lawrence canals 1,349,093 tons of freight were moved, a decrease of 90,041; of which 609,454 were east bound through freight, and 29,810 west bound through freight; 811,616 were agricultural products, 380,127 merchandise, and 81,951 forest products. Two cargoes of grain, aggregating 558 tons, were taken down direct to Montreal through the Welland and St. Lawrence canals.

On the Ottawa river canals the total quantity of freight moved was 520,105 tons, a decrease of 29,981, of which 507,722 were produce of the forest. On the Chambly canal 362,635 tons were moved, an increase of 91,299, of which 218,977 were produce of the forest. On the Rideau canal 69,905 tons were carried, an increase of 15,409; 37,189 being the product of the forest. On the St. Peter's canal 70,804 tons were carried, an increase of 6,314, of which 50,666 were merchandise. On the Murray canal 16,788 tons passed, an increase of 1,245, and 1,651 of this were the produce of the forest. On the Trent Valley canal 40,160 tons were moved, of which 38,135 were product of the forest.

On the Sault Ste. Marie canal the total movement of freight was 3,006,664 tons, being a decrease of 48,623, carried in 3,769 vessels, the number of lockages being 2,610. Of wheat 12,759,318 bushels, and of other grain 1,737,956 bushels were carried; 1,078,668 barrels of flour, 1,680,064 tons of iron ore and 7,927,000 ft. b. m., of lumber; all these items except lumber show a considerable decrease. The total traffic at this point, accommodated by the two canals, the Canadian and U. S., amounted to 25,258,803 tons, an increase of 4,019,365, carried in 20,249 vessels, a decrease of 2,516. The total quantity of wheat carried was 58,301,682 bushels, an increase of 4,138,322, and of other grain 30,079,806, an increase of 3,940,689. Of lumber the total was 1,032,602,000 ft., b. m., an increase of 133,814,420.

As having an interesting bearing on the question of canal versus railway transport of grain from the West, it may be noted that whereas grain and peas passed down to Montreal through the Welland and St. Lawrence canals to the extent of 332,746 tons, a decrease of 186,786 over the previous year, the quantity carried to Montreal via the C. P. and G. T. railways amounted to 209,170 tons, a decrease of 84,221. In addition, during the past two seasons, a new system of grain traffic has come into operation, from Depot Harbor on Georgian Bay, over the Canada Atlantic Ry. to Coteau Landing at the head of the Soulanges canal, thence by barge to Montreal. In the season of 1898, the total freight carried by this route to Montreal was 263,735 tons, of which 226,406 were grain. In the season of 1899 309,573 tons were carried, of which 259,531 were grain; going through the Beauharnois canal, the Soulanges not then being opened. Of the grain so carried in 1898 59,063 tons were wheat and 149,169 corn, and in 1899 66,635 were wheat and 174,932 corn. The quantity of grain carried to tide-water on the New York State canals was 416,700 tons, a decrease of 42,704, while the quantity carried by the railways of the State to tide-water amounted to 4,642,952 tons, a decrease of 728,548. Of the total east and west bound freight carried by the canals of the State of New York (the Erie, Champlain, the Black River, the Cayuga and Seneca and the Oswego), and the competing railways (the New York Central and the Erie) respectively (amounting in 1899 to 51,702,761 tons—greater by 2,391,731 than in 1898), the proportion carried by the canals has fallen steadily from 68.9 per cent. in 1859 and 47.0 per cent. in 1869 to 6.8 per cent. in 1898 and 7.2 per cent. in 1899. These canals carried in 1899 3,686,051 tons: 1,692,972 were through freight from Lake Erie to New York, and of this quantity 1,165,217 went eastward.

On the opening of navigation in the spring of 1900, by means of the enlarged canal systems and the intermediate water ways (though not fully completed), passage to vessels drawing 14 ft. of water from Lake Superior to the head of ocean navigation at Montreal was afforded. The extent of the improved facilities of communication so obtained, and their value to commercial interests may be understood from the fact that in place of the old limit of lock dimensions, viz., length, 200 ft.; width, 45 ft.; depth of water on the sills, 9 ft.; the enlarged locks are 270 ft. in length, 45 ft. in width, with 14 ft. of water on sills, accommodating vessels 255 ft. long and 44 ft. wide. As an index to the carrying power of the new canal works, it may be observed that a typical vessel, the propeller Aragon, whose length is 247 ft. and width 42.6 ft., has passed through the enlarged Welland canal, drawing 14 ft. of water and carrying 2,212 tons of corn. The through route between Montreal and Port Arthur at the head of Lake Superior, now open for a 14 ft. navigation, comprises 73 miles of canal and 965 miles of river and lake waters, a total of 1,038 miles. To Duluth, the total distance is 1,162 miles. The approaches to the canals and the channel through the intermediate river reaches are well defined and are lighted with gas buoys, rendering their navigation by night as well as by day feasible and safe. In the case of the Soulanges canal, the canal is well lighted throughout by electricity, a system which will be extended to other canals before long.

With the more intimate knowledge of the new channel through the St. Lawrence now possessed by the river pilots, full advantage will, no doubt, be taken of the improved facilities afforded by the enlargement works; and this great water highway from the west will realize the aims of its projectors and constructors in giving rise to the establishment of lines of deep draught vessels on the route, with the beneficial result of a vast impetus to the trade and commerce of the country. Already indications of movement on all sides promise the early and rapid development of the new era of progress not only in the direction of the production and transport of crude materials, ores, grain, coal and lumber, but in the enormous expansion of manufactures and industries on the shores of the great lakes and their connecting rivers, notably the iron and steel and ship building industries, to all of which the ability to employ vessels carrying 3,000 tons of freight direct to the seaboard and Europe, which Canada has now afforded, must inevitably prove a great stimulant. The growth of the main centers of production and collection on the lakes as shown by the last U. S. census of 1900 is sufficient indication of the prodigious vitality of the region. Since 1890 Buffalo has increased 37 per cent. to a population of 352,000. Cleveland, the great ship building center, 46 per cent. to 382,000. Toledo, 61 per cent. to 132,000. Detroit, 38 per cent. to 286,000. Milwaukee, 39 per cent. to 285,000, and Chicago, 54 per cent. to 1,699,000. To this has to be added the fact that during the fiscal year ended June 30, 1899, vessels were built on the Great Lakes to the extent of a total gross tonnage of 183,317, of which 139,765 tons were steam vessels. In the previous year this total amounted to 190,743 tons, and the total for the past 11, 1889 to 1899 inclusive, to 816,297 tons.

Though, naturally, not marked in equal degree, the tendency to a similar industrial development on the Canadian side is very evident, especially so at Sault Ste. Marie, where, in addition to the existing important pulp and paper mills, the establishment of large iron and steel works is in progress. At Collingwood, also, and Kingston like works are projected, while at Depot Harbor, on Georgian Bay a system of wharfs and elevators has been constructed for the accommodation of the grain trade. The very extensive harbor improvement works at Montreal, with the system of wharfs and elevators in that connection will naturally tend to attract traffic down the canals to that port. The improvements at Port Colborne, the Lake Erie entrance of the Welland canal, are in progress. They comprise the deepening of the approaches to the canal to 22 ft., and the construction of two docks, with piers 200 ft. wide, upon which grain elevators will be erected to transfer grain to the 14 ft. draught canal boats when required. The deepening of the approaches to the Sault Ste. Marie canal, at present limited to accommodating vessels of 17½ ft. draught, so as to give a depth of 22 ft., thus enabling the canal works to be utilized to their full extent (which is the same as the U. S. canal on the other side of the river), will probably be carried out next year.

The construction of the new works for the improvement and extension of the Trent canal system is proceeding. When the present contracts are completed a 6 ft. navigation will be afforded from Lake Simcoe to Heely's Falls, a distance of about 160 miles, leaving the portion between Heely's Falls and the Bay of Quinte, Lake Ontario, and the portion from the head of Lake Simcoe to Georgian Bay, Lake Huron, still to be dealt with. A question has, however, arisen as to the expediency of adopting Port Hope as the Lake Ontario terminus instead of Trenton, and a survey has been made with a view to ascertaining the feasibility and cost of that route. The letting of the contract for the Trenton-Frankford section has, meantime, been postponed.

During 1899 and 1900, under special appropriations voted by Parliament, surveys have been conducted on the upper River Ottawa with a view to ascertaining the feasibility and probable cost of constructing a canal system which will give a 14 ft. navigation from Georgian Bay down that river to Montreal, a scheme proposed many years ago and lately revived by private parties with considerable energy. It appears to be clearly established that such a series of works can be built at reasonable cost, which would attain the end desired.

EASTERN FREIGHT REPORT.

Messrs. Funch, Edye & Co., New York, report the condition of the eastern freight market as follows:

The steam freight market continues in the same unsatisfactory condition and can only be characterized as the dullest state of affairs that we have experienced for some time past. Handy sized steamers can only be placed for grain on the basis of 2s 6d to Cork f. o., which rate another prompt steamer has accepted. Transactions from the Gulf have been more numerous than from other sections on this coast, but the rates accepted do not show any improvement, in fact lower figures have in many cases been conceded. Timber charters have been fairly active, charterers having been able to secure tonnage practically at their own limits. Time charter business for long periods, is at the moment neglected, charterers not feeling disposed to meet owners' present demand, as they have no difficulty in covering their requirements by chartering steamers from "hand to mouth."

The market for sail tonnage remains quiet and without any features. There is slightly more enquiry for lumber tonnage from the Gulf to South America on the basis of $14 to Buenos Ayres. Other lines show no animation.

THE MANAGEMENT OF OPEN ROWBOATS IN A SURF; BEACHING THEM, ETC.*

CHAPTER II.

ON RUNNING BEFORE A BROKEN SEA OR SURF TO THE SHORE.

(Continued from last week.)

Hence it follows that the management of a boat, when landing through a heavy surf, must, as far as possible, be assimilated to that when proceeding to seaward against one, at least so far as to stop her progress shoreward at the moment of being overtaken by a heavy sea, and thus enabling it to pass her. There are different ways of effecting this object.

1. By turning a boat's head to the sea before entering the broken water and then backing in stern foremost, pulling a few strokes ahead to meet each heavy sea and then again backing astern. If a sea be really heavy and a boat small, this plan will be generally the safest, as a boat can not be kept more under command when the full force of the oars can be used against a heavy surf than by backing them only.

2. If rowing to shore with the stern to seaward, by backing all the oars on the approach of a heavy sea, and rowing ahead again as soon as it has passed to the bow of the boat, thus rowing in on the back of the wave; or, as is practiced in some life-boats, placing the after oarsmen with their faces forward and making them row back at each sea on its approach.

3. If rowed in bow foremost, by towing astern a pig of ballast or large stone, or a large basket, or a canvas bag, termed a "drogue" or drag, made for the purpose, the object of each being to hold the boat's stern back, and prevent her being turned broadside to the sea or broaching-to.

Drogues are in common use by the boatmen on the Norfolk coast; they are conical-shaped bags of about the same form and proportionate length and breadth as a candle extinguisher, about 2 feet wide at the mouth and 4½ feet long. They are towed with the mouth foremost by a stout rope, a small line, termed a tripping line, being fast to the apex or pointed end. When towed with the mouth foremost, they fill with water and offer a considerable resistance, thereby holding back the stern; by letting go the stouter rope and retaining the smaller line, their position is reversed, when they collapse, and can be readily hauled into the boat.

Drogues are chiefly used in sailing boats, when they both serve to check a boat's way and to keep her end on to the sea. They are, however, a great source of safety in rowing boats, and the rowing lifeboats, of the National Lifeboat Institution are now all provided with them.

A boat's sail bent to a yard and towed astern loosed, the yard being attached to a line capable of being veered, hauled, or let go, will act in some measure as a drogue, and will tend much to break the force of the sea immediately astern of the boat.

Heavy weights should be kept out of the extreme ends of a boat; but when rowing before a heavy sea the best trim is deepest by the stern, which prevents the stern being readily thrown on one side by the sea.

A boat should be steered by an oar over the stern, or on one quarter when running before a sea, as the rudder will then at times be of no use. If the rudder be shipped, it should be kept amidships on a sea breaking over the stern.

The following general rules may therefore be depended on when running before, or attempting to land through, a heavy surf or broken water:

1. As far as possible, avoid each sea by placing the boat where the sea will break ahead or astern of her.

2. If the sea be heavy, or if the boat be very small, and especially if she have a square stern, bring her bow round to seaward and back her in, rowing ahead against each heavy surf that can not be avoided sufficiently to allow it to pass the boat.

3. If it be considered safe to proceed to the shore bow foremost, back the oars against each sea on its approach, so as to stop the boat's way through the water as far as possible, and if there is a drogue, or any other instrument in the boat which may be used as one, tow it astern to aid in keeping the boat end on to the sea, which is the chief object in view.

4. Bring the principal weights in the boat toward the end that is to seaward, but not to the extreme end.

5. If a boat, worked by both sails and oars, be running under sail for the land through a heavy sea, her crew should, under all circumstances, unless the beach be quite steep, take down her masts and sails before entering the broken water, and take her to land under oars alone, as above described. If she have sails only, her sails should be much reduced, a half-lowered foresail or other small headsail being sufficient.

* Reproduced from instructions published by the Royal National Life-Boat Institution of Great Britain.

(Concluded in our next issue.)

COLLINGWOOD TO TORONTO.

The Railway Committee of the Dominion House of Commons dealt with the bill to incorporate the Canadian National Railway and Transportation Co., on Friday last. The line is proposed to run from Collingwood to Toronto, and is part of the Toronto scheme to divert western grain traffic through Toronto.

Archibald Campbell said that the promoters included in their scheme a proposition to build eight big steamers to run from the shipping points at the head of the Great Lakes to Collingwood, to connect with the line, and 14 steamers of 14 foot draft to run from Toronto to Montreal. The line would make the route from the West to Montreal nearly 400 miles shorter than the route via Detroit and the Welland canal and save considerable time as well. The scheme would also help the Canadian marine.

A protest against the bill was received from the Ontario Ship and Railway Co., as they have a charter for a railway over practically the same ground.

The matter was not disposed of when the committee adjourned.

AMERICAN ASSOCIATION OF MASTERS AND PILOTS.

Capt. Benj. F. Perkins, grand captain's clerk, and Capt. Luther B. Dow, Grand Purser of the American Association of Masters and Pilots of Steam Vessels, have been making a tour of the lakes in the interest of their association, explaining the objects and aims of the association, and what the association has done for their members in the way of protection, where the issue was a suspension or revocation of their license. Capt. Dow left for New York on the 15th, Capt. Perkins remains to visit cities and establish new harbors—he has established a Harbor in St. Clair, Michigan, with 45 members, and one in Milwaukee, Wis., with 50 members, and a harbor will be established in Marine City and Algonac by the end of this week.

VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo	2,121,000	.....	.....	28,000	485,000
" afloat	875,000	.....	.....	.....	.....
Chicago	11,396,000	5,147,000	3,182,000	500,000	244,000
" afloat	116,000	2,964,000	1,344,000	26,000	.....
Detroit	435,000	481,000	3,000	42,000	23,000
Duluth	8,521,000	5,090,000	1,075,000	365,000	76,000
Fort William, Ont.	1,683,000	.....	.....	.....	.....
Milwaukee	1,055,000	617,000	782,000	1,000	28,000
" afloat	.....	128,000	322,000	.....	72,000
Montreal	138,000	13,000	167,000	9,000	38,000
Port Arthur, Ont.	239,000	.....	.....	.....	.....
Toledo	724,000	1,860,000	419,000	3,000	1,000
Toronto	77,000	.....	3,000	.....	20,000
Grand Total	54,714,000	22,862,000	10,935,000	1,118,000	1,214,000
Corresponding Date, 1899	54,093,000	21,111,000	6,899,000	1,191,000	905,000
Increase	.....	514,000	64,000	.....	.....
Decrease	409,000	.....	.....	80,000	123,000

While the stock of grain at lake ports only is here given the total shows the figures for the entire country except the Pacific Slope.

BRIGHT OUTLOOK FOR SAULT STE. MARIE.

A recent government publication states that from very recent information it would appear that beyond question there is in the region about Sault Ste. Marie almost inexhaustible richness of the soil, the forest, and the mine.

Should the area of arable land be as extensive as reported, it will certainly prove a remarkable anomaly in mining and forest regions; and the fact that these lands are scattered throughout the lumbering and mining districts, instead of occurring in more compact areas, is not without its compensating advantages, in that it secures to the settler or farmer certain and easy access to a first class market.

The natural outlet for this vast area is the Great Lakes, and the most central point is Sault Ste. Marie. Here vast industries are rapidly developing. Millions have already been invested and the projects already under way will, it is said, cost $20,000,000 to complete. These include blast furnaces, pulp mills, rolling mills, etc.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD.)

Title to Intervene—Limitation of Lien.—Where a vessel had been condemned and sold in a suit in admiralty in a federal court, and all non-appearing parties had been adjudged in default, and the time limited for an appeal from the decree had expired, a non-appearance lien claimant was thereafter entitled to intervene and claim a lien on the proceeds of the sale. The James G. Swan, 106 Fed. Rep. (U. S.) 94.

Limitation of Lien—State Statute—Validity—Application.—Ballinger's Ann. Codes and St. § 5953, limiting the enforcement of liens on vessels for supplies to three years from the time the cause of action accrued, is not inapplicable in a suit in admiralty in the United States court, on the ground that the state legislature was without power to pass a law limiting the enforcement of liens on vessels in a federal court. The James G. Swan, 106 Fed. Rep. (U. S.) 94.

Admiralty — Unlawful Sealing — Condemnation—Judgment—Res Judicata—Liens.—Where a vessel was seized and sold in a proceeding in admiralty for unlawful sealing, and due notice of the proceedings was given by the marshal, the proceedings being in rem, the decree, affirmatively showing the court adjudicated all matters litigated by all parties appearing, adjudged non-appearing parties in default, and condemned the vessel as forfeited to the United States, was res judicata as against a non-appearing lien claimant for supplies, so as to preclude him from claiming a lien on the proceeds of the sale of the vessel. The James G. Swan, 106 Fed. Rep. (U. S.) 94.

Collision—Delaware River—Barges Sheering.—Where the evidence in a suit and cross libel for collision between two barges laden with coal, being towed by a tug, tandem, down the Delaware river, showed that it resulted from the sheering of one or both, which caused the one behind to overtake and run into the other, and that the following vessel used due care to avoid the collision, and was also sufficient to establish such fault or negligence on the part of the forward barge as to render her liable, no damages will be allowed, it being impossible to determine with any degree of certainty that the sheering of such vessel, which produced the collision, was not due to the action of the currents and her bad steering qualities, rather than to negligence in her management. The Baker, 106 Fed. Rep. (U. S.) 87.

Additional Wages on Discharge of Seaman.—Rev. St. U. S. § 4527, provides that any seaman who has signed an agreement, and is afterwards discharged before the commencement of the voyage, or before one month's wages are earned, without his fault, may recover from the master or owner, in addition to any wages earned, one month's wages as compensation. Held, that such additional wages are in the nature of damages for breach of contract, and not a penalty or forfeiture, within Rev. St. U. S. § 711, cl. 2, which vests in the courts of the United States exclusive jurisdiction of all suits for penalties or forfeitures incurred under its laws, and that the state courts have jurisdiction of an action to recover such additional wages. Calvin vs. Huntley, 59 N. E. Rep. (Mass.) 435.

Collision—Meeting Steamers—Failure to Signal.—Two tugs with push tows of canal boats met on the Hudson river in the night, and a collision occurred, in which one of the tows was sunk. Both boats were to the west side of the river, and the weight of evidence tended to show that when half a mile apart, and each could see the other's lights, they were nearly head and head. At that distance the one coming down gave the proper signal for passing to the right, but it was not answered, and she kept on her course without repeating the signal or reversing, until too late to prevent collision. The other tug did not hear the signal, and did not herself signal, nor materially change her course or reverse, until the vessels were close together. Held, that both violated the rules, and were in fault for the collision. The Mahar & Burns, 106 Fed. Rep. (U. S.) 86.

Shipping—Injury to Stevedore—Ship's Liability.—Stevedores took charge of the discharge of a vessel, and while replacing the hatches during a rain, reversed the after crossbeam, because of which the fore and afters did not fit, and they were obliged to drive in the after center fore and after, showing that the forward beam had a bend in it, which as it was put in was bent aft, where, if it had been rightly put in, it would have been bent forward. When the hatches were again taken off, and the crossbeam pulled out with a steam winch, the recoil let down an adjoining section of the hatch on which libelant, a stevedore, was standing, precipitating him into the hold, causing his injuries. The framework of the hatch had been in the same condition for years, and no change was made after the accident. Held, that the fact that the crossbeam was bent was not such a defect in the ship as would render it liable for the accident, it being proved that such crossbeams acquired deflection, and that they are marked to be put in as constructed, so that such deflection can be taken up by the proper length and adjustment of the fore and afters, and that if the crossbeam had not been reversed the accident would not have happened. The Aldborough, 106 Fed. Rep. (U. S.) 90.

MARINE RECORD

ESTABLISHED 1878.

Published Every Thursday by

THE MARINE RECORD PUBLISHING CO.,

Incorporated.

C. E. RUSKIN, - - - - Manager
CAPT. JOHN SWAINSON, - - - - Editor.

CLEVELAND, Western Reserve Building. CHICAGO, Royal Insurance Building.

SUBSCRIPTION.

One Copy, one year, postage paid, - - $2.00
One Copy, one year, to foreign countries, - - $3.00
Invariably in advance.

ADVERTISING.

Rates given on application.

All communications should be addressed to the Cleveland office,
THE MARINE RECORD PUBLISHING CO.,
Western Reserve Building, Cleveland, O.

Entered at Cleveland Postoffice as second-class mail matter.

No attention is paid to anonymous communications, but the wishes of contributors as to the use of their names will be scrupulously regarded.

CLEVELAND, O., MARCH 28, 1901.

IN view of the liberal state aid being given to the mercantile marine by other nations, it is suggested by an eminent English writer that the British subsidy for mail carrying be made more remunerative.

CHICAGO can do almost anything, but how it is going to flow 200,000 cubic feet of water through the drainage canal per minute and call it 300,000 cubic feet, is a poser. This is the latest phase of the project to minimize the injurious current in the river by night and day.

THE issue of the News and Herald, Cleveland, March 26, contained on the first page an account of a blizzard at Julesburg, Col., a cyclone at Adamsville, Mich., a tornado at Birmingham, Ala., and a terrific storm at Atlanta, Ga. We don't catch any typhoons, simoons, chinook winds or pamperos, though, and for that same we ought to be truly thankful. Sandusky county, O., also caught a well defined tornado that was wandering around on its own particular whirl.

A FEW years ago it looked as if Capt. Alex. McDougall of "whaleback" fame, would have been a pioneer in the development of the American-Canadian traffic, but he recently deserted his old love and startled the Mississippians by constructing some of the whaleback models for their river trade. However, there is now a Duluth townsman of the worthy captains heading a syndicate willing to invest a few million dollars at Port Colborne and Montreal on a fifty year lease, and thus utilize the natural outlet from the lakes to the coast.

THE struggle for the North Atlantic passenger trade grows keener each year. Thus, the Norddeutscher Lloyd are building two new steamers for their express service between Liverpool and New York. These vessels are the Kronprinz Wilhelm and the Kaiser Wilhelm II. The first-named will be 663 ft. 10 in. long, with a gross tonnage of 15,000 tons. She will have accommodation for 800 cabin and 700 steerage passengers, with a crew of 550 men. "In speed and comfort the ship will surpass everything afloat;" at least, such is the official announcement. But the Kronprinz Wilhelm is to go one better than this. She will be 706½ ft. long, 19,500 tons gross, with engines of 38,000 horse-power. In the words of the official description, "science and art will unite to make this vessel the largest, fastest and finest ship that has ever ploughed the waters of the globe. She will be a monument to German shipbuilding and German industrial art, the fame of which she will carry to all parts, spreading German civilization and German trade and commerce." With a full complement she will have 810 steerage passengers, 950 in the cabins, and a crew of 620 persons.

GULF OF ST. LAWRENCE CURRENTS.

Now that the Gulf of St. Lawrence is likely to become a highway for lake commerce and transportation, too much credit cannot be given to the officers in charge of the tidal survey, who for some time past have been endeavoring to find out something about the laws governing the apparent erratic movement of the currents in the gulf, bays and large inlets.

This valuable work has been in progress for two or three seasons past and already much valuable information has been acquired. The recent report of Mr. N. Bell Dawson, engineer in charge of the tidal survey of the Dominion of Canada, shows that a good work has been accomplished and that there are equally good results to follow from the more immediate and future investigations, all of which will trend towards the safer navigation of the worst piece of generally used waters on the face of the earth.

It is learned from the tidal survey reports and the latest charts of the Gulf of St. Lawrence that on the main steamship route between the Strait of Belle Isle and Anticosti, and over most of the open area of the Gulf of St. Lawrence, the current is very variable, its rate seldom exceeding one knot per hour; and its direction, apparently, principally governed by winds. Its uncertainty renders it necessary for the mariner to exercise much caution. The only currents in the gulf which run with any constancy, in the season of navigation, are: A northeasterly set, of less than one knot per hour, off the west coast of Newfoundland, between Bonen Bay and Rich Point, and the easterly current between the entrance of the river St. Lawrence and the west end of Anticosti, turning to the southward round Cape Gaspe; but these currents are retarded, and may even be reversed, by strong contrary winds.

Appeals are being made to the Dominion government from all quarters to take such steps as will render more safe the navigation of the St. Lawrence gulf and river, and, when it is considered that between 1889 and 1899 twenty-eight ocean steamers were totally lost and eighty-four strandings were recorded in that vicinity, the necessity for more adequate safeguards becomes at once apparent.

Hon. Geo. A. Cox, an eminent Canadian, in speaking on this point from an underwriter's standpoint, very pertinently states in part as follows: "In its present condition the St. Lawrence river route presents much greater risks than a route from a direct ocean port. * * * With these unpalatable facts before us, which it can serve no good purpose to attempt to conceal, our efforts as Canadians desirous of fostering trade by a Canadian route and advancing the interests of our chief Canadian port, should be in the direction of securing the most liberal assistance from the government to reduce by every possible means the perils of St. Lawrence navigation." The foregoing statement can but meet with the direct and positive endorsement of all interested in the commerce and navigational business and prospects of the natural waterway from and to the coast.

While we fully recognize the vast importance of determining tidal currents, other aids to navigation are just as absolutely indispensable, and, in this connection, we may say that it would be a departure fraught with the best possible results, if the Dominion government could see its way clear to the establishment of a few life-saving stations at the sparsely settled points where casualties have most frequently occurred. These, of course, would require to be placed much on the same basis as the service in the United States, that is, equipped, well drilled and salaried crews.

There is no gainsaying the statement that navigating the Gulf of St. Lawrence and its approaches means, as a general experience, the hardest kind of mental work and anxiety that can possibly be thrust upon those who are borne upon its waters holding a responsible position. Therefore, while all aids may be termed essential to safe navigation, the chief reliance must, after all, rest on the primal aids, viz., lights and fog signals, of which, perhaps, there are but too few between Anticosti and Quebec, and, closely supplementing these aids, indeed, sometimes taking the precedence as a safeguard, may be found an intimate knowledge of the conditions regulating the ebb and flow or set and drift of prevailing surface currents, of which the mariner has, perhaps, more reason to be watchful of than any contrary undertow, and more especially so when handling vessels of a moderate draft.

It is to be hoped, therefore, that the Dominion government will see fit to liberally support and extend the work of the tidal survey and by so doing afford facilities for the better and safer navigation of the gulf and adjacent waters.

THE NEW YORK STATE CANALS.

Whether for the future advancement of western industry and products, or for the immediate and present welfare of the State of New York, Governor Odell in his message to the State Senate turned down all of the more costly routes, and recommended the cheapest, or nine foot canal, work on which was commenced several years ago at an estimated outlay of $9,000,000. The latter sum, also the work in so far as it had progressed, proved to be in a measure, a failure, or something after the style of a miniature repetition of the Panama canal fiasco.

It has now been determined that the improvement of the canals along the nine million dollar plan, under the act of 1895, would amount to $19,797,828, divided as follows: The Eastern Division, $5,825,386; the Middle Division, $2,086,987; the Western Division, $7,060,950; the Champlain canal, $2,689,117; and the Oswego canal, $2,135,388. To this is to be added the value of property taken or injured by this improvement. Or say an expenditure of $25,000,000 as opposed to the maximum estimate of the fourth plan, by way of the present canal from Troy to Buffalo, at a total cost of $89,000,000.

The larger sum seems to be a vast amount for the State to expend on its artificial waterways, and, as Governor Odell very cooly or as we might say from the view point of dollars and cents, presents it to the legislature in these terms. The question of improving the canal system or abandoning it altogether is thus presented for your consideration, and it may be well in this connection to study the subject from an economical as well as from a business standpoint. Whether the canals have outlived their usefulness, whether if abandoned increased railroad charges would result, are questions of grave import, and should be carefully weighed and considered, so that a conclusion may be reached and the course the State shall pursue with reference to the canal system established.

In submitting his message to the Senate, the Governor might have had the grace to say that the best engineering talent in the country had been brought into service and deliberate consultation on all phases of the question, and that there was no engineering difficulty in the way of carrying out any of the plans submitted. The more strenuous supporters of the 1,000-ton barge canal with a 14-foot depth of water also accuse the Governor of catering to the rural taxpayers of anti-canal counties as well as railroad influences, etc., however this may be, the governor places himself outside of the pale of an attempt at prevarication, by his recommendation to submit the several plans to the citizens of the State for their approval or disapproval, notwithstanding the assertion that he has thrown cold water on each project save the cheapest, or that one entailing the least expenditure to the State.

THE wonder now comes in whether or not the local inspectors of boilers in the Steamboat Inspection Service are granting any licenses to lake engineers these times. It looks very suspicious when they refuse to give out the names of candidates appearing before them, without special instructions from Washington. The hull inspectors seem to keep the market for masters and mates pretty well supplied, but then, honors ought to be kept fairly even. This semi-secret service licensing board requires a right smart overhauling, but the head of the service either can't, or won't do it.

THE thanks of the RECORD are due to the Light-House Board for duplicate copies of the list of beacons, buoys and day marks of the United States on the northern lakes and rivers, corrected to the opening of navigation, 1901. A copy of this list will be sent free of charge to any shipmaster on application to the office of the Light-House Board, Washington, D. C., or to the Inspector of the Ninth Light-House District at Chicago, Ill.; to the Inspector of the Tenth Light-House District at Buffalo, N. Y., or to the Inspector of the Eleventh Light-House District at Detroit, Mich.

AS an indication of what our neighbor across the pond is doing in the matter of warship building, we may state that on March 5th, four ironclad ships, totaling 59,000 tons, with engines whose collective power is 88,000 i. h. p., was launched from the Royal dockyards, and on the 21st of March the Thames Iron Works Co. launched a battleship. The record shows that in four weeks there was launched for the British navy, four battleships and four armored cruisers, representing in all 106,000 tons and 175,000 h. p., at an ultimate expenditure in round figures of $37,000,000.

MEETING OF VESSEL OWNERS.

Messrs. C. A. Eddy, of Bay City, John Shaw, of Detroit, A. B. Wolvin, of Duluth, W. E. Fitzgerald and David Vance, of Milwaukee, D. Sullivan, of Chicago, and Captain Edward Smith, of Buffalo, who are among the leading vessel owners on the lakes outside of Cleveland, were in Cleveland on Wednesday. President Wolvin thought it would be a good time to hold a meeting of the Lake Carriers' Association, and a number of the local members met with the visitors at the office of Capt. James Corrigan, of the executive committee. The Lake Carriers were only in session about an hour. Most of the time was spent in discussing the outlook for the coming season.

A member of the executive committee said that a number of the members are out of the city and that the question of a schedule of wages for the opening was not taken up. There is no hurry about that, as everything points to a late start, he said, and it may be the latter part of next month before a schedule of wages is adopted. No action was taken in regard to the demands of the engineers.

Most of the visitors assembled at Cleveland to attend a meeting of the Sea and Lake Insurance Co. It was expected that the details necessary for beginning business for the season would be arranged, but action was delayed for a few days, when another meeting will be held. The stock of the new company, which was only started a few weeks ago, is over subscribed. A number of local owners are interested in the company. Mr. George L. McCurdy, the well known Chicago underwriter, is with the new organization.

EIGHT MILES OF WATERWAY WOULD CONNECT WHEELING WITH THE LAKES.

The Wheeling, W. Va., Intelligencer says: "It is not generally realized in Wheeling that a shallow stretch of muddy water eight miles in length is all that prevents a boatload of merchandise from journeying across the country from Cleveland to New Orleans or from Cleveland to Wheeling or Pittsburg. A dam, which can be constructed at the cost of $100,000, would give that shallow stretch a depth of six feet. The vast consequences of such a waterway are not far to seek. Great fleets of flatboats, laden with Pittsburg coal and with ore from the Lake Superior region, would continually traverse it. Those are the two big items which alone are great enough to warrant the building of the dam. Any amount of smaller traffic would result.

"For a long time a waterway from Lake Erie to the Ohio river has been the dream of mercantile interests in Ohio, says a special dispatch from Dresden, Ohio. Twenty-five years ago such a waterway existed, and it had its being by virtue of a dam in the Muskingum river, at a point five miles below Dresden, between Zanesville and Coshocton. But that dam has long since disappeared, owing to a variety of influences, of which storm and tide played only 'thinking parts.' Railroads and politics were the principal factors."

TO CONNECT THE CASPIAN AND BLACK SEAS.

The Russian government is now considering plans for a canal connection between the Caspian and Black seas at the estimated cost of about $20,000,000. The proposed waterway would not only be of great commercial advantage to the cities through which it passed, but it would also be valuable for the purposes of irrigation. The industrial center of Russia is shifting south on account of the production of iron, coal and naphtha, and the railways in southern Russia are every year less and less equal to the demand put upon them. Thus the new canal is regarded as an absolute necessity, and if the government does not put it through, private enterprise will do so.

TO CHRISTEN THE U. S. S. OHIO.

Gov. Nash of Ohio has announced that he will invite his stepdaughter, Mrs. Worthington Babcock, to officiate at the christening of the battleship Ohio. If her health will not permit her to go to San Francisco, Miss Helen Deshler, who was the dearest friend of the governor's only daughter, now dead, will take her place. The governor says positively that, statements to the contrary notwithstanding, he has never asked any other lady to represent the state at the christening of the Ohio and that no other lady has been considered.

THE special maintenance of way issue of the Railway and Engineering Review, Chicago, is a splendid number of 100 pages handsomely illustrated. The Review is always to the fore in matters pertaining to its title, and the issue of March 16 is something indeed to be proud of and a great credit to the railway world.

NOTES.

THE collection of shells belonging to the University of Michigan have been united in one large collection. This has been scientifically arranged and shelved in the shell room. The new collection contains in the neighborhood of six thousand species. The shells of each species are mounted upon a black card and bear a label giving the names and sources of the specimens.

THE ROBERTS BOILER CO., is now building a boiler for the Pennsylvania Railroad. This boiler will be installed in the new tug West Jersey. They are also building boilers for the tug C. A. Dickey, of Gloucester, Mass., and for the new tug now being built at Buffalo for Dunbar & Sullivan. The orders for Roberts boilers which have been received within the last four months amount to nearly $100,000.

IT is understood that the Carnegie Steel Company has finally definitely abandoned the project for the establishment of a $12,000,000 tube plant at Conneaut, O., on the shores of Lake Erie. The work on the plant was stopped by the order of C. M. Schwab. Last week 1,000 acres of the 5,000 under option was conveyed to the Carnegie Steel Company, and the remainder will likely be taken and turned over to the United States Steel Corporation for such use as it may make of the property.

ONE OF MR. EVART'S JOKES.—Premising that in law to "divert a water-course" is so to use your own land as to change or stop the natural flow of water over the adjoining land, to the injury of its owner, I will tell you a story of Mr. Evarts. He and the late R. H. Dana and Judge Hoar, (who told it to me), were driving together along the banks of the upper Connecticut, when they crossed a pretty little stream, and Dana quoted something about the "laughing brook." Evarts exclaimed: "Laughing brook? If it be right for a brook to laugh, how can it be wrong to divert a water course?"—Boston Transcript.

THE Norddeutscher Lloyd Co., of Bremen, have ordered a steamer for the Atlantic service which will exceed by 7 feet the length of the new White Star liner Celtic. As is already well known, the length of the Celtic is 700 feet, and she will have a register tonnage of some 20,000 tons. The tonnage of the German boat, the order for which has been given to the Vulcan Co., of Stettin, is stated to be about equal to that of the Celtic, although her length will be, as already stated, some 7 feet greater. This, if correct, points to the fact that the German boat, Kaiser Wilhelm II, will have somewhat finer lines, or be less in beam or depth, providing the engine space be about equal.

A SPECIAL to the Times-Herald, Chicago, says: "Dr. George M. Randall, a chemist of Lowell, Mass., has discovered a method of producing an artificial fuel resembling bituminous coal at a cost much less than the price of coal in the states where it is mined. The new substance is composed of mineral products now abundantly distributed throughout the earth. The manufacture of this 'synthetical' coal has already passed the experimental stage and is produced in commercial quantities. It has been tested in the engines of a New England city fire department, and also in smelting iron ore in large quantities. It was demonstrated to produce from 17 to 21 per cent. more heat, pound for pound, than bituminous coal." This may be true, but The Black Diamond very much doubts it.

ACCORDING to press cablegrams, the recently issued British Admiralty report condemns the Belleville boiler for naval purposes and says: "The advantages of water-tube boilers for naval purposes are so great, chiefly from a military point of view, that, provided a satisfactory type of water-tube boiler could be adopted, they would be more suitable for the navy than the cylindrical boiler. The committee does not consider that the Belleville boiler has any such advantage as to lead it to recommend it as the best adapted to the requirements of the navy. It recommends, as regards the ships to be ordered, that the Bellville boilers be not fitted in any case, and that in the ships under construction Belleville boilers be not used if work on the boilers is not far advanced. Where a change of boilers would delay the completion of the ships, Belleville boilers should be retained, and they should also be retained in completed vessels. The circulation of the water is defective and uncertain; the automatic feeding apparatus is of a delicate and complicated kind; there is a great excess of pressure required in the case of the feed pipes and the pumps over the boiler pressure; the amount of coal consumed is relatively greater in the Belleville, involving greater cost; there is an excess of boiler pressure over the working pressure of the engines, the water gages do not indicate with certainty the amount of water in the boiler."

FLOTSAM JETSAM AND LAGAN.

A genius who hides his dazzling light under a suburban bushel has written to offer free of cost to the admiralty a suggestion for making the British fleet invisible. He proposes to stick looking glasses all over the men-of-war above the water-line, so that when the enemy comes along he will see the water reflected in the hulls of our ships, and he won't know what has happened. And while he is thinking the problem out the British will explain things by blowing him into a happier world.—London Daily Mail.

Even when sailing under the salty, iron-bound articles which Jack voluntarily signed, or made his mark to, drunk or sober, he will crawl out of an act of seeming insubordination by not refusing to obey orders. A salty never refuses duty, oh no, the fo'c'stle bucks or sea lawyer puts it to him in this way, "don't say you won't do it," but exact terms. When he finds the bracelets on him, or in limbo, the sea lawyer tells him that they can't put him there, didn't refuse duty. Jack replies in a very logical way that he is there all the same. Then it's a case of do you know what you signed for?

The San Francisco newspapers report scarcity of seamen for out-going deep-water vessels. A bonus of $40 per man has been offered—to the crimps—and still the goods are not forthcoming. The offer of $40 bonus is really a cause of the scarcity of seamen, instead of being a means of reducing that scarcity. The bonus represents the difference between the normal and the present standard of wages. Instead of offering this difference to the seaman, the shipowners are offering it to the crimps. When the shipowners and crimps talk of seamen's wages being regulated by the law of "supply and demadd" they mean the law of bonus and blood-money.—Coast Seamen's Journal, San Francisco.

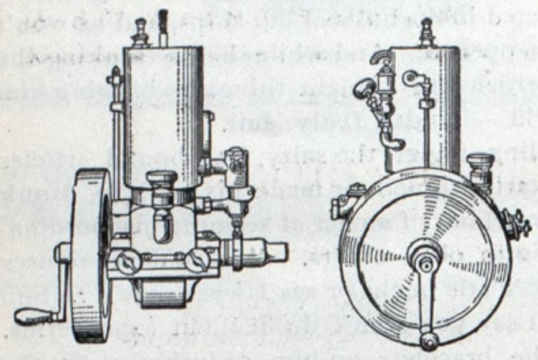
What is this! Carrying coals to Newcastle, Ay? "The St. James Gazette, London, announces the Herreshoffs have been commissioned by a shipbuilder of Glasgow to design a 65-foot racing yacht, to be built on the Clyde." Wonders will never cease. It is said, though, that the Herreshoff referred to is the son of Mrs. C. F. Herreshoff, who is studying engineering at Glasgow. He is said to have a natural talent for designing and has associated himself with Professor Harvard Biles, who occupies the John Elder chair of naval science in the Glasgow University, in the latter's large business of designing war vessels and passenger and cargo steamers, to which will be added yacht building, with young Mr. Herreshoff, who will take up a permanent residence in Glasgow, as the superintendent of that branch of the business.

An illustrated article on the Cresent Ship Yard at Elizabethport, N. J., Lewis Nixon, proprietor, appears in the New York Herald of Sunday, March 10. Among the interesting data in the article is the following: Only a few hundred feet square, but cruisers, monitors, torpedo boats, submarine boats, house boats, fast yachts, six screw Yukon "creepers," stern wheelers for the Amazon, self dumping scows and what not that floats are built there. Engines for 400 pound pressure, 40 miles an hour yacht being finished there. Five submarine boats under way there. The whole establishment run by one man who designed the battleship Oregon. Sidewheel Old Dominion river boat turned out here in forty-two days. The ocean-going yacht Columbia, the converted yacht Vixen, the record breaking coast survey Pathfinder, the original Holland submarine boat, and the fast gunboat Annapolis were products of the Crescent Ship Yard. Started in 1895, the one hundredth vessel has just been begun.

I once heard an old sailor say that he would never forgive himself for a seeming neglect while on watch. It appears that it was his lookout, the night was fine enough but a little dark and cloudy, the barky was slipping along with everything set and he was keeping a fairly good lookout ahead, walking across the top gallant forecastle thinking of nothing, or, about the last girl he kissed. While so intently occupied he thought he heard something on the lee bow but paid no attention, a minute or two after he was sure that he heard a halloo, and in a slow, half drowsy way walked over to leeward, but could pick nothing up, and so guessed it was only his fancy anyway. Darsent report his notion to the officer of the watch who would first thing have suspicioned that he'd been drowsing if not asleep on the lookout. Years after, different ship, different everything, on the lookout again, I noticed how alert he was, walked across the t' gall'nt forecastle like a major or sentinel, ears skinned and eyes peeled for all there was in it, there was no doubt but that he felt his position all right enough. In a few words he mentioned that he was afraid that he had once passed some castaways; was'nt quite sure but would be sartin that he'd never pass any more while it was his lookout.

Truscott

VAPOR MARINE MOTORS.
HIGH GRADE PLEASURE CRAFT.



TRUSCOTT BOAT MFG. CO.
ST. JOSEPH, MICH.

SEND 5 STAMPS FOR CATALOG.

Pintsch Gas Lighted Buoys.

Adopted by the English, German, French, Russian, Italian and United States Light-House Departments for channel and harbor lighting. Over 1,000 gas buoys and gas beacons in service.

Burn Continuously

from 80 to 365 days and nights without attention, and can be seen a distance of six miles. . . . . .

Controlled by

THE SAFETY CAR HEATING AND LIGHTING CO.

160 Broadway, New York City.

BAINES BROS.
PROVISION MERCHANTS AND SHIPPERS OF
BEEF, MUTTON, PORK & POULTRY
LARD, SAUSAGE, ETC
VESSEL SUPPLIES A SPECIALTY
43, 44 & 45 ELK STREET MARKET
BUFFALO, N.Y.
PHONE SENECA 346

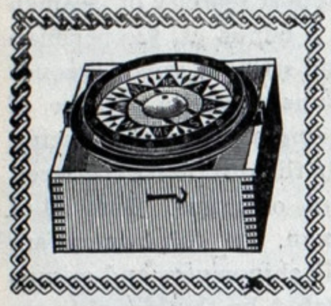
Cleveland Telephone, Glen. 87 F.

CHAS. R. DITTRICK,

SUBMARINE DIVER

Day or Night Calls Answered Promptly.

21 Everton Street, GLENVILLE, O.



THE **Bliss** LIQUID (Spirit) COMPASS

Made in seven sizes by JOHN BLISS & CO., 128 Front Street, New York, is finely finished sensitive, accurate and durable. Moves quickly and is extremely steady. Is the best Liquid Compass ever made in this or any country. For sale by ship chandlers generally.

CORRESPONDENCE.

☞We do not hold ourselves responsible in any way for the views or opinions expressed by our correspondents. It is our desire that all sides of any question affecting the interests or welfare of the lake marine should be fairly represented in THE MARINE RECORD.

SHIP'S LIFE-BOATS.

CHICAGO, March 26, 1901,

To the Editor Marine Record:

Your editorial in the RECORD of March 21st, "Rowboats—Metal Versus Wood," appears to make out a sad case for the metallic life-boats, as all you do is to damn them with a faint praise.

I have sailed for a good many years with these same metallic boats, and believe that should occasion arise they would be found just as good boats to take to in a sea-way as any wooden boat ever put together, though I may say, that there has been some scampish work done on the metal boats by small or amateur builders, just as in wooden boats or anything else.

The metallic life-boats are light, durable and well shaped, they are always ready to be put in the water, and it can be said that the rows of rivets, of which you speak, are never leaky, beside which, they all have patent plugs and fitted with an air chamber, so as to make them more buoyant and give them regular life-saving qualities, facts which you have apparently overlooked.

It is quite true that the government departments are not very eager to adopt the metallic boats, and do not supply its several branches of service with them, but, there are always some to be found in each department except, perhaps, the Life-Saving Service, now in the Treasury Department, and perhaps it would be found more economical if metal boats replaced some of the expensive wooden boats in that service also, and I would go further, by supplying the recently patented metallic oars, which you say are manufactured, or about being so, in Detroit, for all sorts of work.

The wooden boats require a good deal of attention, and when they are left on a ship's decks for any length of time, are invariably found to be leaky when put in the water, they are also harder to row, and when in wreckage or rocks, bilge or break up, whereas the metal boats only become indented, but do not break.

There are many more advantages in favor of the metal life-boats over wood, as hundreds of your readers could bear testimony to, and I hope that now you have started it, that the case will be gone into on its merits, and that we will hear more in favor of metal boats than you seem to think.

In the days of wooden ships they pooh-poohed the idea of iron boats, one authority going so far as to say that he would eat the first iron boat that ever crossed the Atlantic, but you see where we are to-day. Yours truly.

JAMES E. ELWOOD.

THE ST. MARY'S FALLS.

DETROIT, March 27, 1901.

To The Editor Marine Record:

I was somewhat interested in the statement that the Canadian Bridge Co., now desirous of building a bridge between the two "Soos," could have a Roman macadamized highway across there if they waited until the power canals consumed the present outflow going over the falls.

As it appears to me, the consumption of water will never be large enough to dry up the falls, at least to the extent which you seem to imply, not even if two more power canals were excavated at that point, as there is such a vast body of water continually sweeping over the falls, that it would be found a most difficult problem to use up the great outflow by artificial means.

That there may be a fractional lessening of the water going over the falls I am prepared to admit, and that some points of the rocks may show a little ebb at certain times, while others and new ones may show up more frequently than usual, but you need have no fear that the power canals will divert so enormous an outflow as to make any appreciable difference with the falls, much less with the level of lake Superior or its outlet at any point.

In calling your attention to this feature it is more especially with a view to note the stupendous waste of water passing over the falls, and the probable effect of two minor acqueducts on the enormous outflow, going to level up Lakes Michigan and Huron, which, in any event, will not be interfered with in the slightest degree.

Yours truly, SUBSCRIBER.

LIGHTS FOR THE PELEE PASSAGE.

PELEE ISLAND, MAR. 25, 1901.

To the Editor of the Marine Record.

In a recent debate in the Canadian House of Commons Sir Louis Davies, Minister of Marine and Fisheries, stated that of all the mariners only two had wanted the Dummy Light, at the end of Pelee Spit, rebuilt.

The minister's acquaintance with mariners must be very limited, for certainly sailors who know the position are by a large majority in favor of rebuilding it—they even consider its erection imperative!

It is true that the erection of a light on the Middle Ground, Pelee Passage, has been determined on, and a very desirable work it will be, but this does not do away with the need for a light on the old site of the Dummy, or failing that on the South East Shoal, about 3½ miles from the Dummy Light.

From the proposed light on the Middle Ground to the old Dummy Light, is nearly four miles, from the same to Point Pelee Island light about the same distance, quite sufficient distance to require all the lights named in thick weather.

Especially is a light needed on Point Pelee Spit, which reaches out 3½ miles from the low, sandy point, which forms the extreme end of the South Island, or Point Pelee.

For 12 miles out from the main land this point reaches with a low growth of trees, rising from a shore little above the water's edge, so that in a dark night it is scarcely to be distinguished from the lake itself.

Running almost at right angles across Lake Erie to the south, it lies across the course of vessels from the eastern end of Lake Erie, low lurking and most dangerous, a shifting reef of sand.

It has been the scene of scores of wrecks and much loss of life, and no expense should be spared to make navigation safe in its vicinity at all times. Only last fall the Maumee Belle and her entire crew of 7 were lost in this fatal place.

For the safe navigation of the Pelee Passage neither pains nor expense should be spared—for we should never forget that through this passage the entire commerce of the whole lakes passes in one vast procession, never ceasing, night or day, for at least 7 months of each year; a commerce many times greater than passes the Suez canal in a whole year.

Therefore I again repeat, there should be at least 3 lights—on both sides and in the center, (Middle Ground,) of this crowded marine thoroughfare.

F. B. MCCORMICK.

SUMMARY OF ICE CONDITIONS.

Norman B. Conger Inspector of the Weather Bureau and Marine Agent gives the following summary of the ice conditions on the lakes. The reports indicate the ice has been materially decreased by the warm weather of the past three days, and there is less ice in all the lakes. Over western Superior the ice-field is packing at Duluth, with open water off Two Harbors and Eagle Harbor; the ice-field continues heavy over eastern Superior; the conditions have not changed in St. Mary's river, except a large field of ice is reported at the mouth of the river extending out of sight; over Green Bay the snow is melting off the ice, otherwise the conditions are unchanged; there is very little ice reported in Lake Michigan; and the ice was decreased to 20 inches at Mackinaw; the large ice-fields remain in the southern portion of Lake Huron, and the ice bridge is still firm at the foot of the lake; reports indicate the rivers are open from Port Huron to Amherstburg, with considerable running ice in the Detroit river. There is less ice than was reported last week in Lake Erie, and the large field at Buffalo is breaking up and running down the river; there is very little ice reported in Ontario.

In comparison with same period last year, there is less ice reported in all the lakes, although the conditions are about the same over eastern Superior, St. Mary's river and southern Lake Huron. Last year the ice was still firm in Lake St. Clair except at the extreme southern end and Detroit river was open only to Sandwich Point; in Erie the ice-field extended from Cleveland, eastward to Buffalo.

LAKE TONNAGE.

Prior to 1899 the lake tonnage had not reached an aggregate of 1,000,000 tons. In that year the aggregate tonnage was 1,063,064 tons, and from that time until the present day an almost steady increase has been noted. The minimum yearly increase during the decade was 14,059 tons and the maximum 86,035 tons, the latter having been recorded in 1897, while the year previous has a gain of 82,608 tons to its credit. The aggregate tonnage on the lakes at the close of the last fiscal year was 1,565,587 tons, a gain of 502,524 tons, or 32 per cent., during the interim covered by the comparison.

In 1891, when the aggregate tonnage under the American flag was 4,684,759, the tonnage of the lake craft amounted to 1,154,870 tons, or over 24 per cent. According to the latest statistics the aggregate burden of American vessels is 5,164,839 tons, and the Great Lakes, with 1,565,587 tons embraces 30 per cent. Of the 1,592,831 tons of iron and steel tonnage in the United States, inclusive of Hawaii, there are on the inland seas 687,769 tons or 48 per cent. The Atlantic and gulf coasts have 762,821 tons, or less than 11 per cent. in excess of the lake fleet. Of the aggregate of 1,255 iron and steel vessels flying the American flag, the Great Lakes has but 322, as compared with 763 on the Atlantic and Gulf coasts. The Great Lakes, with 26 per cent. of the metal vessels in the American fleet, has 43 per cent. of the tonnage, while the iron and steel fleet owned on the Atlantic and gulf coasts numerically exceeds that on the lakes by 137 per cent., the tonnage excess is less than 11 per cent.

Of the larger iron and steel vessels—those of 1,000 tons each and over—now operated under the American flag, out of a total in the United States and Hawaii of 778 vessels of 1,710,136 tons, there are to be found on the Great Lakes 424 vessels of 911,533 tons. It will thus be seen that the lakes have 54 per cent. of the whole fleet and 53 per cent. of the tonnage. In numerical strength the lake fleet exceeds that of the Atlantic coast and the Gulf of Mexico by 151 vessels, or 55 per cent., and in tonnage by 271,381 tons, or 42 per cent.

As an instance of development in Palestine the following report by Consul Winter, of Annaberg, will be of interest: The Dead Sea, which for thousands of years has been a forsaken solitude in the midst of a desert, on whose waves no rudder has been seen for centuries, is to have a line of motor boats in the future. Owing to the continued increase in traffic and the influx of tourists, a shorter route is to be found between Jerusalem and Kerak, the ancient capital of the land of Moab. The first little steamer, built at one of the Hamburg docks, is about 100 feet long, and began the voyage to Palestine on June 16. An order has already been given for the building of a second steamer. The one already built and on the way is named Prodromos (that is, "forerunner"). It will carry thirty-four persons, together with freight of all kinds. The promoters of this new enterprise are the inmates of a Greek cloister in Jerusalem. The management of the line is entirely in German hands.

COALING AND STEAM RADIUS.

The current number of the "Journal of the American Society of Naval Engineers" contains two papers of exceptional value. The first paper in the magazine is a well written account of "Coaling of Warships," by Lieut. Comdr. J. R. Edwards, U. S. N., and gives a succinct description of the various methods now in use for coaling warships readily and quickly, either in port or at sea. The description of the experiments which were carried on by the Massachusetts during the summer of 1900 are especially valuable, as they show the possibility of coaling a ship of war while under way at sea with safety and dispatch. The second article is a tabulated record of the "Steaming radius of the United States Naval Vessels," compiled by Lieut. B. C. Bryan, U. S. N., "from the steam logs of vessels on file in the Bureau of Steam Engineering." Lieutenant Bryan quite correctly states the value of this table in the introduction to the article when he says: "The question of how far a vessel may be expected to steam at different rates of speed under usual conditions is a very important one; in fact, it is of vital importance in time of war, and particularly so to a country like the United States, having few coaling stations, and these far from the base of any likely offensive operations." In time of action speed is a measure of the efficiency of a man-of-war, and other things being equal the faster vessel will win; but in time of peace, or rather in cruising work, the steaming radius is the prime factor in the efficiency of a vessel of war, and it is in the demonstration of this important factor that this exhaustive table by Lieutenant Bryan has its value.

One of the deductions from this tabulated performance is the fact that notwithstanding the high rate of speed most of our modern ships are capable of maintaining for a longer or shorter period, the actual efficient cruising speed for steaming radius lies between ten and eleven knots per hour, rather inclining toward the former speed. In plainer language, the speed at which the average warship can steam the greatest number of knots on her bunker coal is in the neighborhood of ten and a half knots per hour. The type of vessel seems to make but little difference in this estimate of efficient steaming radius, but the gunboat of a thousand tons displacement equally with the protected cruiser, the battleship and the commerce destroyer, will steam farther at 10.5 knots per hour than at any other speed.

MARINE PATENTS ISSUED.

Patents issued March 19, 1901. Reported especially for the MARINE RECORD. We furnish complete copies of patents at the rate of 10 cent each.

669,993. Cement for ship's bottoms. A. Johennessen, Flennsburg, Germany.

670,041. Submersion regulating gear for torpedoes. A Van Stockum, Lisse, Netherlands.

670,225. Ship construction. J. Gayley, Pittsburg, Pa.

670,228. Stay-sail rigging. P. McDonald, Noank, Conn.

670,293. Boat detaching apparatus. F. S. Pett, Dover, England.

670,368. Pivoted anchor. W. Beyers, Sunderland, Eng.

NOTICE TO MARINERS.

UNITED STATES ENGINEER OFFICE, JONES BUILDING, DETROIT, MICH., March 26, 1901.

A new chart, in colors, of Dunkirk Harbor, N. Y., has just been issued and is now on sale by the U. S. Lake Survey, Detroit, Mich., at ten cents per copy.

W. L. FISK,
Maj. Corps of Engineers, U. S. A.

Government Proposals.

U. S. ENGINEER OFFICE, Buffalo, N. Y., March 21, 1901. Sealed proposals in duplicate for construction of concrete superstructure on breakwater at Buffalo, N. Y., will be received here until 11 a. m., April 5, 1901, and then opened. Information furnished on application. T. W. SYMONS, Major, Engrs. 13-14

SEALED PROPOSALS will be received at the office of the Light House Engineer, Buffalo, N. Y., until 12 o'clock M., April 22, 1901, and then opened, for rebuilding the keepers' dwelling at Port Clinton, O., in accordance with specifications, copies of which, with blank proposals and other information, may be had upon application to Major T. W. SYMONS, Corps of Engineers, U. S. A. 13-14

U. S. ENGINEER OFFICE, Custom House, Cincinnati, Ohio, March 6, 1901. Sealed proposals for building 500 feet length of Chanoine dam of navigable pass at Dam No. 2, Ohio river, will be received here until 2 p. m., April 10, 1901, and then publicly opened. Information furnished on application to WM. H. BIXBY, Maj., Engrs, at this office, or to WM MARTIN, resident engineer, Davis Island Dam, Bellevue, Pa. 10-14

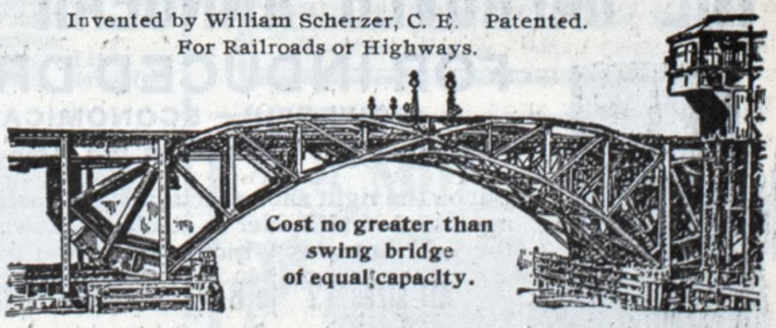
MARVELOUS
THE NEW
BAUSCH & LOMB-ZEISS
STEREO Binocular Glasses.
Used by the Armies and Navies of the World.
Invaluable for Tourists, Sportsmen and Every-day Use. Booklet Free.
Bausch & Lomb Optical Co.,
Rochester, N. Y.
New York. Chicago.
For sale by all dealers.

S. F. HODGE & CO.
MARINE ENGINES,
PROPELLER WHEELS,
DECK HOISTERS,
MARINE REPAIRS.
312 ATWATER STREET,
DETROIT, MICH.

Chas. E. & W. F. Peck,
58 William Street, New York City. Royal Insurance Building, Chicago, Ill.
C. T. BOWRING & CO.
5 and 6 Billiter Avenue, E. C., - London, England.

Insurance
BROWN & CO., - - - 202 Main Street, Buffalo, N. Y.
A. A. & B. W. PARKER, 15 Atwater St., W. Detroit, Mich.
J. G. KEITH & CO., - 138 Rialto Building, Chicago, Ill.
LA SALLE & CO., Board of Trade Building, Duluth, Minn.
Are prepared to make rates on all classes of Marine Insurance on the Great Lakes, both CARGOES and HULLS.

THE SCHERZER ROLLING LIFT BRIDGES.
Invented by William Scherzer, C. E. Patented.
For Railroads or Highways.
OPENED OR CLOSED IN TWENTY SECONDS.



Cost no greater than swing bridge of equal capacity.
Vessel owners should urge the adoption of these bridges. The 8-track Scherzer Bridge over the Chicago Drainage Canal is the largest movable bridge in the world. A number in successful operation, and several in process of construction.
SCHERZER ROLLING LIFT BRIDGE CO., 1616 Monadnock Block, Chicago, Ill.

Steamboat Fuel at Chicago.

THE Y&L

YOUGHIOGHENY and LEHIGH COAL CO.

J. T. CONNERY, Manager. ARCHIE J. HITCHCOCK, Dock Supt.

MAIN OFFICE: 1238-1242 Chicago Stock Exchange Building.

Long Distance Telephone, Main 5049. 110 LA SALLE STREET.

FUEL DOCKS: No. 1, Michigan Slip and Basin. 'Phone 3046, Main.
No. 2, N. Halstead St. Bridge. 'Phone 773, North.

FUEL LIGHTER: Equipped with 125 2-ton Buckets for Fueling anywhere in Harbor

WE PRODUCE OUR YOUGHIOGHENY COAL AND GUARANTEE QUALITY.

PICKANDS, MATHER & CO.

PIG IRON.
IRON ORE AND COAL.

FUEL LIGHTERS AT BUFFALO, ERIE, ASHTABULA, AND CLEVELAND.

At DETOUR, MICH., A FUEL DOCK equipped with Shute capacity of 600 Tons.
Best Quality PITTSBURGH COAL furnished at any time during Day or Night.

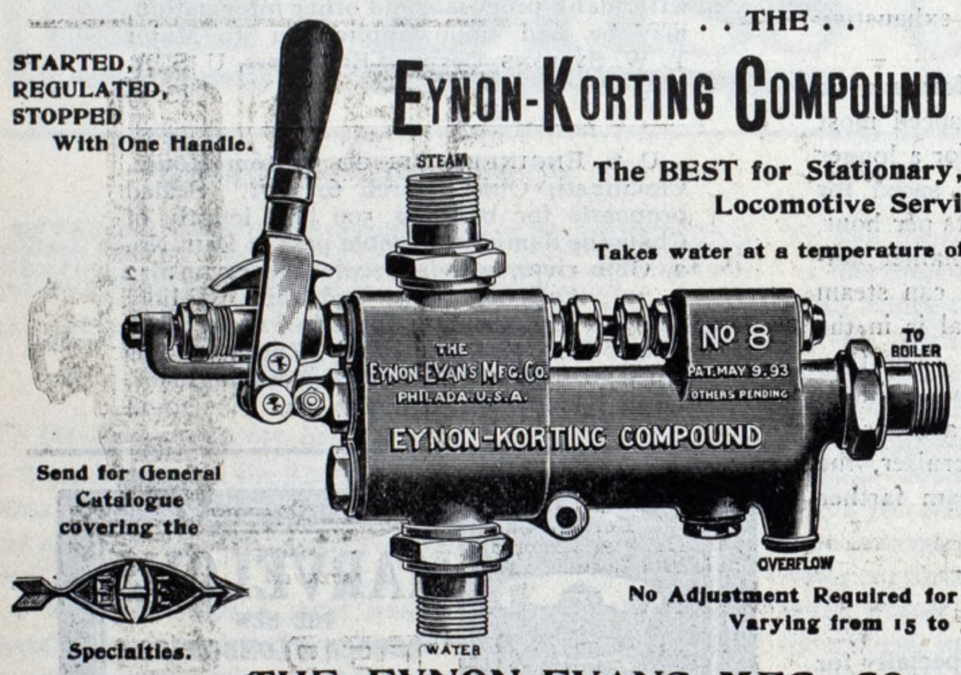
WESTERN RESERVE BUILDING, CLEVELAND, O.

. . THE . . EYNON-KORTING COMPOUND INJECTOR.

STARTED, REGULATED, STOPPED With One Handle.

The BEST for Stationary, Marine or Locomotive Service.

Takes water at a temperature of 150 degrees.



Will Lift Water 24 Feet.

Has a Greater Range than any other Injector.

No Adjustment Required for Steam Pressures Varying from 15 to 300 Lbs.

Send for General Catalogue covering the Specialties.

THE EYNON-EVANS MFG. CO.

New York Office, 107 Liberty Street
Boston Office, 42 Oliver Street.

15th and Clearfield Streets,
PHILADELPHIA, U. S. A.

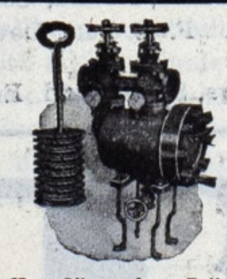
WATER FILTERS REGULATORS & ENGINES

We make **Pressure Regulating Valves** for all purposes, steam or water.

Our **Feed-Water Filter** will keep oil out of your boiler.

We can interest you if you use a condenser.

Water Engines for Pumping Organs



Keep Oil out of your Boiler with the FEED-WATER FILTER For Marine and Land Service Two of these Filters are in use on the Oceanic.

THE ROSS VALVE CO. TROY N.Y.

THE IMPROVED ANNULAR STEAM JET

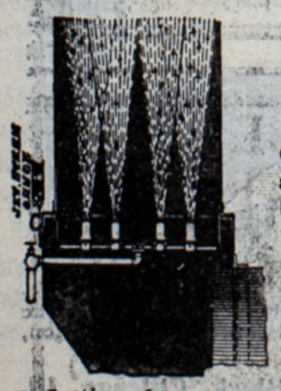
FOR INDUCED DRAFT

POWERFUL. ECONOMICAL.

67 in Use. 50 to 200 lbs. Pressure.

Cut on the right shows section of Jet Castings which are attached to Spider in stack as shown in cut on the left. 15 to 25% increase in power guaranteed.

All sizes 12" to 8 ft. have been installed.



Section of Stack.

Section of Jet.

H. Bloomsburg & Co.,
112 35th Street,
NEWPORT NEWS, VA.

M. A. HANNA & CO.

COAL, IRON ORE AND PIG IRON.

Steamboat Fuel at Ashtabula.

Large Supplies of Best Quality.

Fuel scow with elevators and discharging spouts. Storage of 650 tons. Discharges 150 tons an hour into steamers while unloading cargo.

LIGHTER carrying different grades at all times.

MINERS AND SHIPPERS.

MAIN OFFICE, Perry-Payne Bldg., Cleveland, O.

THE W. L. SCOTT COMPANY,

ERIE, PA.

WHOLESALE DEALER IN

Shamokin-Wilkes Barre ANTHRACITE.
Youghiogheny, Mansfield, PITTSBURG.

Vessel Fueling a Specialty

by steam lighter or car dump, at all hours. Electric light.

...Coals

MAIN OFFICE: SCOTT BLOCK. LONG DISTANCE 'PHONE 440.

FUELING OFFICE: CANAL DOCK. LONG DISTANCE 'PHONE 320.

SHERIFFS MFG. CO.

ESTABLISHED 1854.

MILWAUKEE, WIS.

MECHANICS, ENGINEERS, ELECTRICIANS, FIREMEN, ETC.

New 40 page pamphlet containing Questions asked by Examining Board of Engineers. Sent free. GEO. A. ZELLER, Publisher, St. Louis, Mo. Mention Marine Record. 13-23

JOHN C. JOLL

SHIP CARPENTER, CALKER and SPAR MAKER.

Jobbing of all kinds promptly attended to.

'PHONES { MAIN 523 L. WEST 808 F. 45 Main St.

Res. 1097 Franklin Ave. CLEVELAND, O.

Settlers' Rates

via the Nickel Plate Road. Beginning with Tuesday, February 12th, low rate settlers' tickets will be on sale every Tuesday to and including April 30th, to Oregon, Montana, Washington and all points in the Northwest. Write, wire, 'phone or call on the nearest agent, C. A. Asterlin, T. P. A., Ft. Wayne, Ind., or E. A. Akers, C. P. & T. A., Cleveland, O. 10-17

If U Want a PUMP or SYPHON

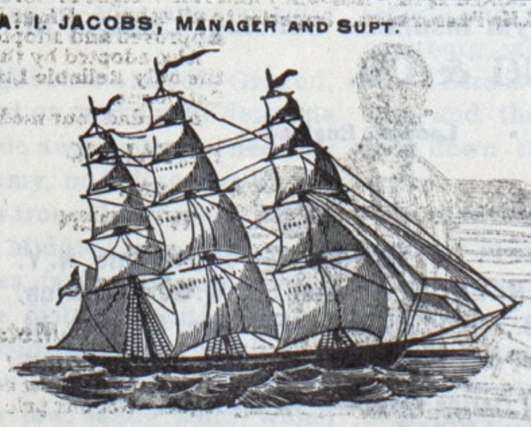
Write to the E.W. Vanduzen Co. of Cincinnati, O., for their catalog 76. They give you facts and figures about their Steam Jet Pumps, Syphons and Barge Pumps. A postal will bring full information by return mail free of charge.

THE E. W. VANDUZEN CO.,
Cincinnati, O.

Independent Ship Building and Repair Company,

CLEVELAND, O.

A. I. JACOBS, MANAGER AND SUPT.



Repair Work Promptly Attended to.

Special attention given to Steel and Iron Work. Plates Reset and Riveted.

SHIP CARPENTERS AND CALKERS FURNISHED.

Office and Works 21 Main St.

TEL. CLEVELAND, M. 823 F. CUYAHOGA, C. 477

Residence 137 Franklin Ave.

TEL. CLEVELAND, M. 813 J. CUYAHOGA, A. 1067

All night calls answered from residence.

ALSO WHOLESALE AND RETAIL DEALERS IN SHIP TIMBER.

Nautical Schools.

Chicago Nautical School

1612 Masonic Temple,
CHICAGO.

W. J. WILSON,
(Late Lieutenant U. S. Navy),
Principal.

A full and complete course of instruction in lake and ocean navigation. Also special branches taught those desiring to qualify themselves for better positions in the marine service. Students taught by correspondence. Students may begin at any time. Send for circular.

Capt. Samuel W. Gould,

265 MARCY AVE., CLEVELAND.

Gives instructions in Ocean Navigation and prepares candidates for the examinations for Master and Pilots' Licenses, before the Local Steamboat Inspectors

—TAKE—

Wade Park or Payne Ave. Car.

IN PRACTICAL USE ON THE BEST AND LARGEST LAKE STEAMERS

Using all Types of Boilers and all Pressures of Steam.

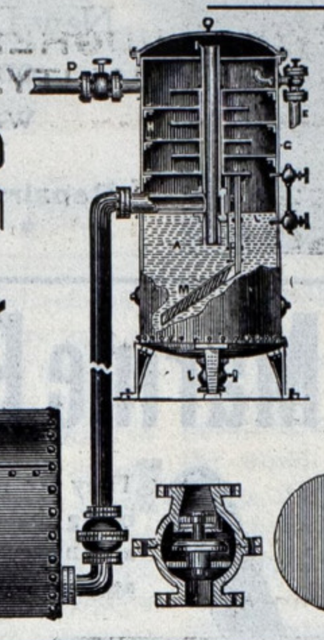
Every Purifier Warranted to Remove all Sediment or Scale-Forming Substance.

ROBERT LEARMONTH,

PATENTEE,

SEND FOR CIRCULAR. 100 WHITE BLDG., BUFFALO, N. Y.

THE BUFFALO FEED WATER HEATER AND PURIFIER.



NAMES OF STEAMERS ON THE LAKES USING THE BUFFALO FEED WATER HEATER AND PURIFIER:

Zenith Transit Co.'s steamers Empire City, Crescent City, Zenith City, Superior City, Queen City, Pennsylvania and John W. Gates.

The Republic Iron Co 's steamers America, Brazil, Thomas Maytham and Chili.

Mitchell Transportation Co.'s steamer Hendrick S. Holden.

Minnesota Iron Co.'s steamer Presque Isle.

American Steel Barge Co.'s steamer Alex. McDougall.

Lake Michigan & Lake Superior Transportation Co.'s steamer Manitou.

Bessemer Steamship Co.'s steamers S. F. B. Morse and Douglas Houghton.

American Transportation Co.'s steamers John Harper and Alex. Nimick.

Red Star Line's steamers Robert Mills and Wyoming.

Wilson Transit Line's steamers W. D. Rees and Andrew Carnegie.

And the steamer William R. Linn.

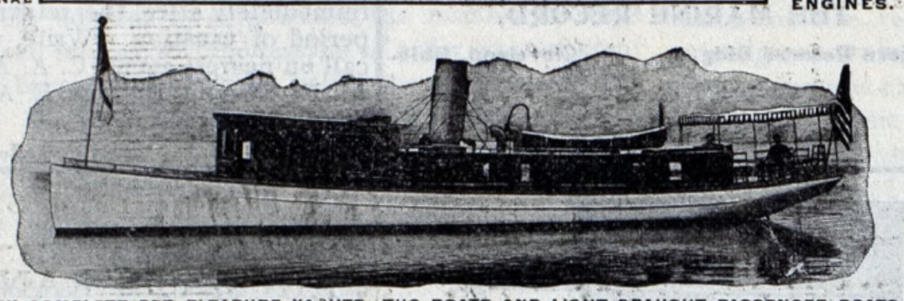
CONDENSERS.

BOYER SECTIONAL WATER TUBE BOILERS.

PROPELLER WHEELS.

JOHN E. THROPP & SONS CO.,
TRENTON, N. J., U. S. A.

SINGLE, COMPOUND AND TRIPLE EXPANSION ENGINES.



MACHINERY COMPLETE FOR PLEASURE YACHTS, TUG BOATS AND LIGHT DRAUGHT PASSENGER BOATS.

THE CHASE MACHINE COMPANY,
ENGINEERS AND MACHINISTS.

MANUFACTURERS, UNDER THE CHASE PATENTS, OF

Fog Whistle Machines, Hoisting Engines, Steering Engines, Automatic Towing Engines, Power and Drop Hammers, and other Machinery. Engineers' Supplies and General Jobbing.

111 ELM STREET. TELEPHONE, MAIN 994. CLEVELAND, O.

THE FLUSHOMETER

THE KENNEY SYSTEM.

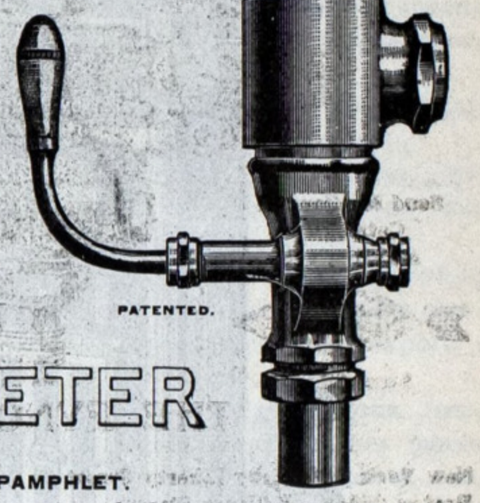
FOR FLUSHING WATER CLOSETS.

NO CUP LEATHERS OR SPRINGS.

The Best System ever Invented for Use on Steam Vessels.

Owners and constructors of Steamships, Yachts and Steamboats have found it indispensable. Used by the U. S. War and Navy Departments. Transports Grant, Sheridan, Burnside, Terry, Hooker, Thomas, Logan, Sherman and others. Also Albany Day Line Steamers; Norfolk and Washington S. S. Line; Steam Yachts Neaira, Aphrodite and Loando, and new Lake Steamers Illinois, Pennsylvania, Angeline and others.

Showing application of Flushometer.



PATENTED.

FLUSHOMETER
TRADE MARK.

SEND FOR ILLUSTRATED PAMPHLET.

THE KENNEY CO., 72-74 Trinity Place, NEW YORK.

YAWLS
AND
LIFE BOATS
IN STOCK.

MICHIGAN YACHT & POWER CO.
DETROIT.
1540 JEFFERSON AVE.

PRACTICAL MECHANICS.

Applied to the requirements of the sailor. By Thos. McKenzie. Illustrated; 12 mo.; cloth, $1.50, by mail, prepaid. The Marine Record, Western Reserve Bldg., Cleveland, O.

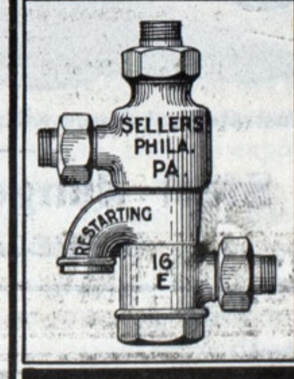
JOHN DONNELLY, SR., PRES.
JOHN DONNELLY, JR., VICE PRES.
H. B. FOLGER, TREAS.
THOS. DONNELLY, SEC'Y.

THE DONNELLY SALVAGE AND WRECKING CO., Ltd.
KINGSTON, ONT.

EXPERIENCED DIVERS, TUGS, STEAM PUMPS, ETC.,

SUPPLIED ON SHORTEST NOTICE.

Sellers' Restarting Injector



A strictly first class machine at moderate cost.

Perfectly automatic, has wide range of capacities, and raises water promptly with hot or cold pipes.

Very simple, has few parts and is easily repaired.

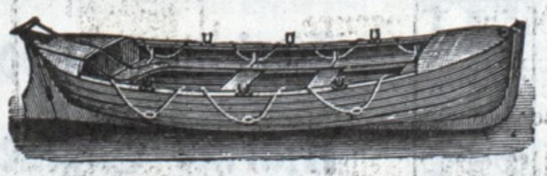
All parts interchangeable, made of the best bronze, and the workmanship is perfect. Send for special catalogue descriptive of this Injector.

JENKINS BROTHERS, Selling Agents
NEW YORK, BOSTON, PHILA., CHICAGO

NEVERSINK CORK JACKET AND LIFE BELT.

Warranted 24 lb. Buoyancy and full Weight of Cork, as required by U. S. Inspectors. **Consolidated Cork Life Preservers.** Superior to all others. **Rings Buoys and Fenders.** SAFEST CHEAPEST.
Approved and adopted by U. S. Board of Supervising Inspectors.
Also adopted by the principal Ocean, Lake and River Steamer Lines as the only Reliable Life Preserver. Vessels and trade supplied. Send for Catalogue.
Awardad four medals by World's Columbian Exposition.

METALLIC and WOODEN LIFE BOATS.



Metallic Life Rafts, Marine Drags.

Manufacturer of Woolsey's Patent Life Buoy, which is the lightest, cheapest and most compact Life Raft known. Send for illustrated catalogue, Get our prices before buying elsewhere.

D. KAHNWEILER'S SONS, 437 Pearl St., New York City.

Compasses Adjusted

For deviation, and deviation tables supplied. Great facilities for doing the work by day or night.

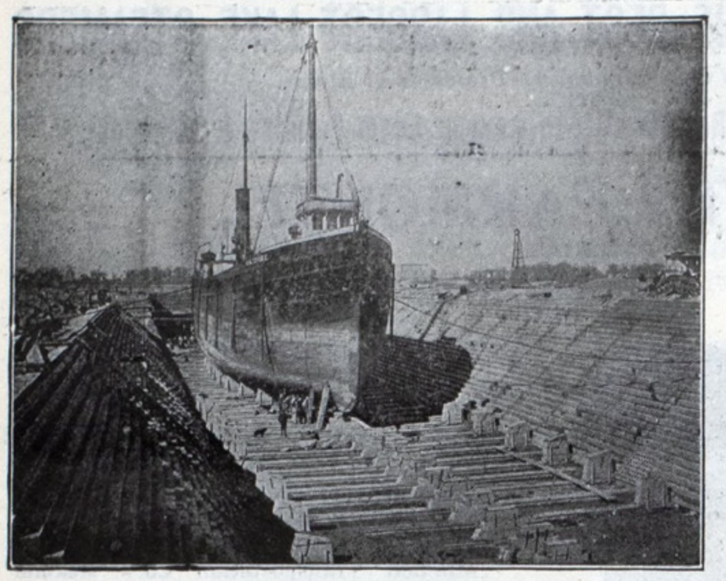
John Maurice.

Office, 24-26 Market St., CHICAGO.
Residence, 1213 Albany Avenue.

A. J. MORSE & SON.

DIVING APPARATUS

140 CONGRESS ST. BOSTON.



Craig Ship Building Co.

TOLEDO, OHIO.

New Dry-Dock 450 feet long, 110 feet wide on top, 55 feet wide on bottom, 16 feet water on sill.

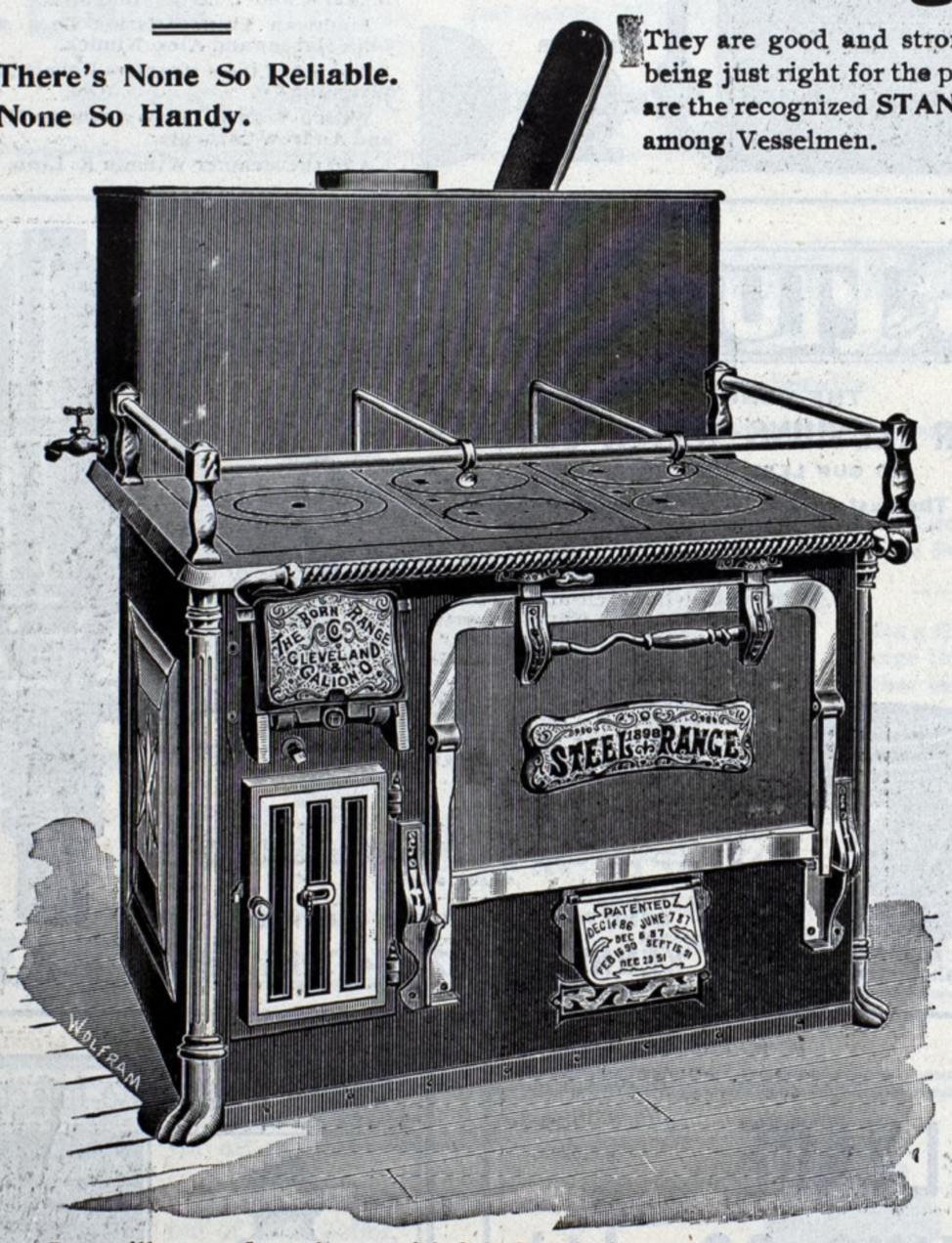
Repairs to Metal and Wooden Ships a Specialty.

Metal and Wooden Ship Builders.

The Born STEEL PLATE FRENCH Marine Ranges

There's None So Reliable. None So Handy.

They are good and strong, and being just right for the purpose, are the recognized **STANDARD** among Vesselmen.



Large illustrated catalogue with full description sent on application.

The Born Steel Range and Manufacturing Co.

CLEVELAND, OHIO.

Elementary Seamanship.

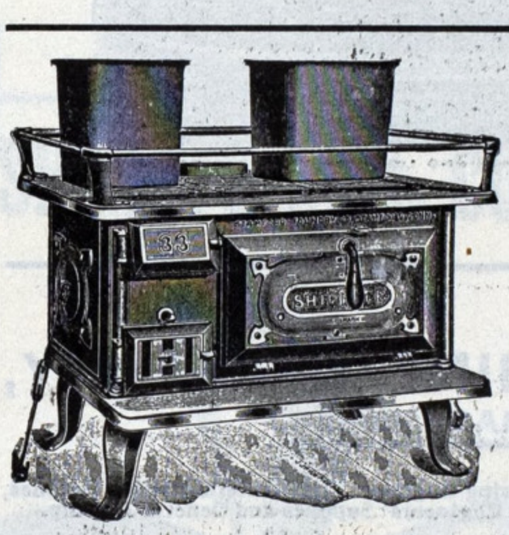
By D. Wilson Barker. Illustrated; 12 mo.; cloth, $2.00 by mail prepaid.

THE MARINE RECORD,

Western Reserve Bldg., Cleveland, Ohio.

The Nickel Plate Road

will sell excursion tickets to students holding certificates from school principal, at one and one third fare for the round trip account the Easter vacation. Tickets available day before school closes, the closing day and day immediately after, the return limit to cover period of vacation. Write, wire, 'phone, or call on nearest agent, C. A. ASTERLIN, T. P. A., Ft. Wayne, Ind., or E. A. AKERS, C. P. & T. A., Cleveland, O. 32-14



SHIPMATE RANGES.

We make vessel ranges of various sizes, from the large two-oven Shipmate Range down to the two-hole Yacht Range.

The Tinnerman Steel Range Co., 797-803 Lorain Street, Cleveland, have a full assortment of these ranges, and can fill orders for any size. They are sold also by

Robt. C. Bialy, 923-925 Water St., Bay City, Mich.
Soo Hardware Co., Sault Ste. Marie, Mich.

THE STAMFORD FOUNDRY COMPANY,
STAMFORD, CONN.
Established 1830.

SCOTT'S COAST PILOT FOR THE LAKES.

PRICE, $1.50.

FOR SALE BY THE MARINE RECORD, WESTERN RESERVE BLDG., CLEVELAND, O.

W. S. JENKS, President. O. L. JENKS, Vice Pres. and Treas. A. M. CARPENTER, Sec. and Gen'l Mgr.

The Jenks Ship Building Co.

Office and Machine Shops
Fourth Street.

Yards
Foot of Lincoln Ave.

Steel and Wood Ship Builders.
Marine Engines and Boilers.

Port Huron, Mich.

STEAM WINDLASSES CAPSTANS AND STEERING APPARATUS